Show Commands

The commands in this chapter apply to the Cisco MDS 9000 Family of multilayer directors and fabric switches. All commands are shown here in alphabetical order regardless of command mode. See the "Command Modes" section to determine the appropriate mode for each command. For more information, refer to the *Cisco MDS 9000 Family Configuration Guide*.

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show aaa authentication

To display configured authentication information, use the **show aaa authentication** command.

show aaa authentication

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

To display configured authentication parameters.

```
switch# show aaa authentication
         default: group TacServer local none
         console: local
         iscsi: local
         dhchap: local
```

show aaa groups

To display configured server groups, use the **show aaa groups** command.

show aaa groups

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

To display configured server groups.

```
switch# show aaa groups
radius
TacServer
```

show arp

To display Address Resolution Protocol (ARP) entries, use the **show arp** command.

show arp

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

This displays the ARP table.

```
switch# show arp
Protocol Address           Age (min)      Hardware Addr  Type  Interface
Internet  171.1.1.1        0              0006.5bec.699c  ARPA  mgmt0
Internet  172.2.0.1        4              0000.0c07.ac01  ARPA  mgmt0
```

Related Commands

Command	Description
clear arp-cache	Clears the arp-cache table entries.

show banner motd

To display a configured message of the day (MOTD) banner, use the **show banner moted** command.

show banner motd

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

The configured MOTD banner is displayed before the login prompt on the terminal whenever a user logs in to a Cisco MDS 9000 Family switch.

Examples

The following example displays the configured banner message.

```
switch# show banner motd
 Testing the MOTD Feature
```

The configured message is visible the next time you log in to the switch:

```
 Testing the MOTD Feature
switch login:
```

Related Commands

Command	Description
banner motd	Configures the required banner message.

show boot

To display the boot variables or modules, use the **show boot** command.

show boot [**module** [*slot* | *variable-name*] | **sup-1** | **sup-2** | **variables**]

Syntax Description

module	Displays the boot variables for modules.
slot	Specifies a module by the slot number.
variable-name	Specifies the variable. Maximum length is 80 characters.
sup-1	Displays the upper sup configuration.
sup-2	Displays the lower sup configuration.
variables	Displays the list of boot variables.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Release 1.2(2).

Usage Guidelines

None.

Examples

The following example displays the current contents of the boot variable.

```
switch# show boot
kickstart variable = bootflash:/kickstart-image
system variable = bootflash:/system-image
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays the images on the specified ASM module.

```
switch# show boot module
Module 2
asm-sfn variable = bootflash:/asm-image
```

The following example displays a list of all boot variables. The ASM-SFN boot variable is used for the ASM.

```
switch# show boot variables
List of boot variables are:
     asm-sfn
     system
     kickstart
```

show boot auto-copy

To display state of the auto-copy feature, use the **show boot auto-copy** command.

show boot auto-copy [**list**]

Syntax Description

list	Displays the list of files to be auto-copied

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

The following example displays the current state of the auto-copy feature.

```
switch# show boot auto-copy
Boot variables Auto-Copy ON
```

The following example displays the ilc1.bin image being copied to the standby supervisor module's bootflash, and once this is successful, the next file will be lasilc1.bin. This command only displays files on the active supervisor module.

```
switch# show boot auto-copy list
File: /bootflash/ilc1.bin
Bootvar: ilce

File:/bootflash/lasilc1.bin
Bootvar: lasilc
```

The following example displays a typical message when the auto-copy option is disabled or if no files are copied.

```
switch# show boot auto-copy list
No file currently being auto-copied
```

show callhome

To display related Call Home information configured on a switch, use the **show callhome** command.

show callhome [**destination-profile** {*profile* | **full-txt-destination** | **short-txt-destination** | **XML-destination**} | **transport-email**]

Syntax Description

destination-profile	Displays Call Home destination profile information for the specified profile.
profile	Specifies a profile name. Maximum length is 32 characters.
full-txt-destination	Specifies the full-txt-destination destination profile.
short-txt-destination	Specifies the short-txt-destination destination profile.
XML-destination	Specifies the XML-destination destination profile.
transport-email	Displays Call Home e-mail transport information.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays configured callhome information.

```
switch# show callhome
callhome enabled
Callhome Information:
contact person name:who@where
contact person's email:person@place.com
contact person's phone number:310-408-4000
street addr:1234 Picaboo Street, Any city, Any state, 12345
site id:Site1ManhattanNewYork
customer id:Customer1234
contract id:Andiamo1234
switch priority:0
```

The following example displays destination profile information.

```
switch# show callhome destination-profile
XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com

Short-txt destination profile information
maximum message size:4000
```

```
email addresses configured:
person1@epage.company.com

full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example displays the full-text profile.

```
switch# show callhome destination-profile profile full-txt-destination
full-txt destination profile information
maximum message size:250000
email addresses configured:
person2@company2.com
```

The following example displays the short-text profile.

```
switch# show callhome destination-profile profile short-txt-destination
Short-txt destination profile information
maximum message size:4000
email addresses configured:
person2@company2.com
```

The following example displays the XML destination profile.

```
switch# show callhome destination-profile profile XML-destination
XML destination profile information
maximum message size:250000
email addresses configured:
findout@.cisco.com
```

The following example displays e-mail and SMTP information.

```
switch# show callhome transport-email
from email addr:user@company1.com
reply to email addr:pointer@company.com
return receipt email addr:user@company1.com
smtp server:server.company.com
smtp server port:25
```

show cdp

To display CDP parameters configured globally or for a specific interface, use the **show cdp** command.

show cdp {**all** | **entry** [**all** | **name** *cdp-name*] | **global** | **interface** [**gigbitethernet** *slot/port* | **mgmt 0**] | **neighbors** [**detail** | **interface (gigbitethernet** *slot/port* | **mgmt 0**)] | **traffic interface** [**gigbitethernet** *slot/port* | **mgmt 0**]}

Syntax Description

all	Displays all enabled CDP interfaces.
entry	Displays CDP database entries.
all	Displays all CDP entries in the database
name *cdp-name*	Displays CDP entries that match a specified name. Maximum length is 256 characters.
global	Displays global CDP parameters.
interface	Displays CDP parameters for an interface.
gigabitethernet *slot/port*	Specifies the Gigabit Ethernet interface at the slot number and port number separated by a slash (/).
mgmt 0	Specifies the Ethernet management interface.
neighbors	Displays all CDP neighbors.
detail	Displays detailed information for all CDP neighbors
interface	Displays CDP information for neighbors on a specified interface.
traffic	Displays CDP traffic statistics for an interface.

Defaults

None

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

This command is allowed only on the active supervisor module in the Cisco MDS 9500 Series.

Examples

The following example displays all CDP capable interfaces and parameters.

```
switch# show cdp all
GigabitEthernet4/1 is up
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
GigabitEthernet4/8 is down
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
mgmt0 is up
```

```
    CDP enabled on interface
    Sending CDP packets every 100 seconds
    Holdtime is 200 seconds
```

The following example displays all CDP neighbor entries.

```
switch# show cdp entry all
----------------------------------------
Device ID:069038747(Kiowa3)
Entry address(es):
    IP Address: 172.22.92.5
Platform: WS-C5500, Capabilities: Trans-Bridge Switch
Interface: mgmt0, Port ID (outgoing port): 5/22
Holdtime: 136 sec

Version:
WS-C5500 Software, Version McpSW: 2.4(3) NmpSW: 2.4(3)
Copyright (c) 1995-1997 by Cisco Systems

Advertisement Version: 1
```

The following example displays the specified CDP neighbor.

```
switch# show cdp entry name 0
----------------------------------------
Device ID:0
Entry address(es):
    IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
```

The following example displays global CDP parameters.

```
switch# show cdp global
Global CDP information:
    CDP enabled globally
    Sending CDP packets every 60 seconds
    Sending a holdtime value of 180 seconds
    Sending CDPv2 advertisements is enabled
```

The following example displays CDP parameters for the management interface.

```
switch# show cdp interface mgmt 0
mgmt0 is up
    CDP enabled on interface
    Sending CDP packets every 60 seconds
    Holdtime is 180 seconds
```

The following example displays CDP parameters for the Gigabit Ethernet interface.

```
switch# show cdp interface gigabitethernet 4/1
GigabitEthernet4/1 is up
    CDP enabled on interface
    Sending CDP packets every 80 seconds
    Holdtime is 200 seconds
```

The following example displays CDP Neighbors (brief).

```
switch# show cdp neighbors
Capability Codes: R - Router, T - Trans-Bridge, B - Source-Route-Bridge
                  S - Switch, H - Host, I - IGMP, r - Repeater

Device ID        Local Intrfce   Hldtme  Capability  Platform      Port ID
0                Gig4/1          135     H           DS-X9530-SF1- Gig4/1
069038732(Kiowa2 mgmt0           132     T S         WS-C5500      8/11
069038747(Kiowa3 mgmt0           156     T S         WS-C5500      6/20
069038747(Kiowa3 mgmt0           158     T S         WS-C5500      5/22
```

The following example displays CDP neighbors (detail).

```
switch# show CDP neighbor detail
----------------------------------------
Device ID:0
Entry address(es):
    IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 162 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
----------------------------------------
Device ID:069038732(Kiowa2)
Entry address(es):
    IP Address: 172.22.91.5
Platform: WS-C5500, Capabilities: Trans-Bridge Switch
Interface: mgmt0, Port ID (outgoing port): 8/11
Holdtime: 132 sec

Version:
WS-C5500 Software, Version McpSW: 2.4(3) NmpSW: 2.4(3)
Copyright (c) 1995-1997 by Cisco Systems

Advertisement Version: 1
```

The following example displays the specified CDP neighbor (detail).

```
switch# show CDP neighbors interface gigabitethernet 4/1 detail
----------------------------------------
Device ID:0
Entry address(es):
    IP Address: 0.0.0.0
Platform: DS-X9530-SF1-K9, Capabilities: Host
Interface: GigabitEthernet4/1, Port ID (outgoing port): GigabitEthernet4/1
Holdtime: 144 sec

Version:
1.1(0.144)

Advertisement Version: 2
Duplex: full
```

The following example displays CDP traffic statistics for the management interface.

```
switch# show cdp traffic interface mgmt 0
----------------------------------------
Traffic statistics for mgmt0
Input Statistics:
    Total Packets: 1148
    Valid CDP Packets: 1148
        CDP v1 Packets: 1148
        CDP v2 Packets: 0
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0

Output Statistics:
    Total Packets: 2329
        CDP v1 Packets: 1164
        CDP v2 Packets: 1165
    Send Errors: 0
```

The following example displays CDP traffic statistics for the Gigabit Ethernet interface

```
switch# show cdp traffic interface gigabitethernet 4/1
----------------------------------------
Traffic statistics for GigabitEthernet4/1
Input Statistics:
    Total Packets: 674
    Valid CDP Packets: 674
        CDP v1 Packets: 0
        CDP v2 Packets: 674
    Invalid CDP Packets: 0
        Unsupported Version: 0
        Checksum Errors: 0
        Malformed Packets: 0

Output Statistics:
    Total Packets: 674
        CDP v1 Packets: 0
        CDP v2 Packets: 674
    Send Errors: 0
```

show cimserver

To display the Common Information Models (CIM) configurations and settings, use the **show cimserver** command.

show cimserver [**certificateName** | **HttpsStatus** | **HttpStatus** | **status**]

Syntax Description

certificateName	Displays the installed Secure Socket Layer (SSL) certificate.
HttpsStatus	Displays the HTTP (non-secure) protocol settings for the CIM server.
HttpStatus	Displays the HTTPS (secure) protocol for the CIM server.
status	Displays the CIM server status

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

The following example displays CIM server certificate files.

```
switch# show cimserver certificateName
cimserver certificate file name is servcert.pem
```

The following example displays the CIM server configuration.

```
switch# show cimserver
 cimserver is enabled
 cimserver Http is not enabled
 cimserver Https is enabled
 cimserver certificate file name is servcert.pem
```

The following example displays the CIM server HTTPS status.

```
switch# show cimserver httpsstatus
 cimserver Https is enabled
```

The following example displays the CIM server HTTP status.

```
switch# show cimserver httpstatus
 cimserver Http is not enabled
```

show clock

To display the system date and time and verify the time zone configuration, use the **show clock** command.

show clock

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the system date, time, and time zone configuration.

```
switch# show clock
Fri Mar 14 01:31:48 UTC 2003
```

show cores

To display all the cores presently available for upload from active sup, use the **show cores** command.

show cores

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

In the following example, an FSPF core was generated on the active supervisor (slot 5), an FCC core on the standby supervisor (slot 6) and acltcam and fib on module (slot 8).

```
switch# show cores

Module-num     Process-name       PID     Core-create-time
----------     ------------       ---     ----------------
5               fspf             1524     Jan 9 03:11
6               fcc               919     Jan 9 03:09
8               acltcam           285     Jan 9 03:09
8               fib               283     Jan 9 03:08
```

show debug logfile

To display the debug messages that are saved in the debug log file, use the **show debug logfile** command.

show debug logfile *filename*

Syntax Description

filename	Specifes the debug log file name. Maximum length is 80 characters.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the debug messages in the specified debug log file.

```
switch# show debug logfile SampleFile
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =0,fspfLsrDomainId = 0, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =0,fspfLsrDomainId = 0, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Recd rsp for GETNEXT fo
r entry (vsanIndex=1,fspfLsrDomainId = 10, fspfLsrType=0, fspfLinkIndex = 1,fspf
LinkNbrDomainId = 84, fspfLinkPortIndex = 67331,fspfLinkNbrPortIndex = 66064, fs
pfLinkType = 1,fspfLinkCost = 500
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =1,fspfLsrDomainId = 209, fspfLsrType = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =16777216,fspfLsrDomainId = 3506438144, fspfLsr
Type = 0
2004 Jun 28 00:14:17 snmpd[2463]: header_fspfLinkEntry : Sending GETNEXT request
 for fspfLsrTable for vsanIndex  =33554432,fspfLsrDomainId = 4009754624, fspfLsr
Type = 16777216
```

show environment

To display all environment-related switch information (status of chassis clock, chassis fan modules, power supply modules, power supply redundancy mode and power usage summary, module temperature thresholds and alarm status, use the **show environment** command.

show environment [**clock** | **fan** | **power** | **temperature**]

Syntax Description

clock	Displays status of chassis clock modules
fan	Displays status of chassis fan modules
power	Displays status of power supply modules, power supply redundancy mode and power usage summary.
temperature	Displays module temperature thresholds and alarm status of temperature sensors.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the status and alarm states of the clock, fan, power supply and temperature sensors.

```
switch# show environment
switch-180# show env
Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               DS-C9500-CL          0.0        ok/active
B               DS-C9500-CL          0.0        ok/standby


Fan:
-----------------------------------------------------
Fan             Model                Hw         Status
-----------------------------------------------------
Chassis         WS-9SLOT-FAN         0.0        ok
PS-1            --                   --         ok
PS-2            --                   --         ok
```

```
Temperature:
--------------------------------------------------------------------
Module   Sensor   MajorThresh   MinorThres   CurTemp     Status
                  (Celsius)     (Celsius)    (Celsius)
--------------------------------------------------------------------
1        Outlet   75            60           38          ok
1        Intake   65            50           35          ok

5        Outlet   75            60           36          ok
5        Intake   65            50           36          ok

6        Outlet   75            60           40          ok
6        Intake   65            50           33          ok

9        Outlet   75            60           28          ok
9        Intake   65            50           40          ok

Power Supply:
------------------------------------------------------
PS  Model                Power     Power       Status
                         (Watts)   (Amp @42V)
------------------------------------------------------
1   DS-CAC-2500W         1153.32   27.46       ok
2   WS-CAC-2500W         1153.32   27.46       ok

Mod Model                Power     Power       Power     Power       Status
                         Requested Requested   Allocated Allocated
                         (Watts)   (Amp @42V)  (Watts)   (Amp @42V)
--- -------------------  -------   ----------  --------- ----------  ----------
1    DS-X9016            220.08    5.24        220.08    5.24        powered-up
5    DS-X9530-SF1-K9     220.08    5.24        220.08    5.24        powered-up
6    DS-X9530-SF1-K9     220.08    5.24        220.08    5.24        powered-up
9    DS-X9016            220.08    5.24        220.08    5.24        powered-up

Power Usage Summary:
--------------------
Power Supply redundancy mode:                 non-redundant (combined)

Total Power Capacity                          2306.64  W

Power reserved for Supervisor(s)[-]           440.16   W
Power reserved for Fan Module(s)[-]           210.00   W
Power currently used by Modules[-]            440.16   W

                                              -------
Total Power Available                         1216.32  W
                                              -------
```

Related Commands

Command	Description
show hardware	Displays all hardware components on a system.

show fabric-binding

To display configured fabric binding information, use the **show fabric-binding** command in EXEC mode.

show fabric-binding {**database** [**active**] [**vsan** *vsan-id*] | **efmd statistics** [**vsan** *vsan-id*] | **statistics** [**vsan** *vsan-id*] | **status** [**vsan** *vsan-id*] | **violations** [**last** *number*]}

Syntax Description

database	Displays configured database information.
active	Displays the active database configuration information.
vsan *vsan-id*	Specifies the FICON-enabled VSAN ID. The ragne is 1 to 4093.
efmd statistics	Displays Exchange Fabric Membership Data (EFMD) statistics.
statistics	Displays fabric binding statistics.
status	Displays fabric binding status
violations	Displays violations in the fabric binding configuration.
last *number*	Specifies between 1 and 100 recent violations.

Defaults

None

Command Modes

EXEC mode

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None

Examples

The following example displays configured fabric binding database information.

```
switch# show fabric-binding database
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
1      21:00:05:30:23:11:11:11   0x66(102)
1      21:00:05:30:23:1a:11:03    0x19(25)
1      20:00:00:05:30:00:2a:1e   0xea(234)
4      21:00:05:30:23:11:11:11   0x66(102)
4      21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
[Total 7 entries]
```

The following example displays active fabric binding information.

```
switch# show fabric-binding database active
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
1      21:00:05:30:23:11:11:11   0x66(102)
1      21:00:05:30:23:1a:11:03    0x19(25)
1      20:00:00:05:30:00:2a:1e   0xea(234)
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
61     20:00:00:05:30:00:2a:1e   0xef(239)
```

The following example displays active VSAN-specific fabric binding information.

```
switch# show fabric-binding database active vsan 61
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
61     21:00:05:30:23:1a:11:03    0x19(25)
61     21:00:05:30:23:11:11:11   0x66(102)
61     20:00:00:05:30:00:2a:1e   0xef(239)
[Total 3 entries]
```

The following example displays configured VSAN-specific fabric binding information.

```
switch# show fabric-binding database vsan 4
-------------------------------------------------
Vsan   Logging-in Switch WWN     Domain-id
-------------------------------------------------
4      21:00:05:30:23:11:11:11   0x66(102)
4      21:00:05:30:23:1a:11:03    0x19(25)
[Total 2 entries]
```

The following example displays fabric binding statistics.

```
switch# show fabric-binding statistics
Statistics For VSAN: 1
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 4
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 61
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 345
-----------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
```

```
Statistics For VSAN: 346
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 347
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 348
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 789
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
Statistics For VSAN: 790
------------------------
Number of sWWN permit: 0
Number of sWWN deny  : 0

Total Logins permitted  : 0
Total Logins denied     : 0
```

The following example displays fabric binding status for each VSAN.

```
switch# show fabric-binding status
VSAN 1 :Activated database
VSAN 4 :No Active database
VSAN 61 :Activated database
VSAN 345 :No Active database
VSAN 346 :No Active database
VSAN 347 :No Active database
VSAN 348 :No Active database
VSAN 789 :No Active database
VSAN 790 :No Active database
```

The following example displays EFMD statistics.

```
switch# show fabric-binding efmd statistics

EFMD Protocol Statistics for VSAN 1
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0

EFMD Protocol Statistics for VSAN 4
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
```

```
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0

EFMD Protocol Statistics for VSAN 61
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
```

The following example displays EFMD statistics for a specified VSAN.

```
switch# show fabric-binding efmd statistics vsan 4

EFMD Protocol Statistics for VSAN 4
---------------------------------------
Merge Requests -> Transmitted : 0 , Received : 0
Merge Accepts  -> Transmitted : 0 , Received : 0
Merge Rejects  -> Transmitted : 0 , Received : 0
Merge Busy     -> Transmitted : 0 , Received : 0
Merge Errors   -> Transmitted : 0 , Received : 0
```

The following example displays fabric binding violations.

```
switch# show fabric-binding violations
-------------------------------------------------------------------------------
VSAN Switch WWN [domain] Last-Time [Repeat count] Reason
-------------------------------------------------------------------------------
3 20:00:00:05:30:00:4a:1e [*] Nov 25 05:44:58 2003 [2] sWWN not found
3 20:00:00:05:30:00:4a:1e [0xeb] Nov 25 05:46:14 2003 [2] Domain mismatch
4 20:00:00:05:30:00:4a:1e [*] Nov 25 05:46:25 2003 [1] Database mismatch
```

show fc-tunnel

To display configured Fibre Channel tunnel information, use the **show fc-tunnel** command.

show fc-tunnel [**explicit-path** [*name*] | **tunnel-id-map**]

Syntax Description

explicit-path	Displays all configured explicit paths.
name	Specifies the explicit path name. Maximum length is 16 characters.
tunnel-id-map	Displays the mapping information for the outgoing interface.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

Multiple tunnel IDs can terminate at the same interface.

Examples

The following example displays the FC tunnel status

```
switch# show fc-tunnel
fc-tunnel is enabled
```

The following example displays the FC tunnel egress mapping information.

```
switch# show fc-tunnel tunnel-id-map
tunnel id egress interface
    150    fc3/1
    100     fc3/1
```

The following example displays explicit mapping information of the FC tunnel.

```
switch# show fc-tunnel explicit-path
Explicit path name: Alternate1
       10.20.1.2 loose
       10.20.1.3 strict
Explicit path name: User2
       10.20.50.1 strict
       10.20.50.4 loose
```

show fc2

To display FC2 information, use the **show fc2** command.

show fc2 {bind | classf | exchange | exchresp | flogi | nport | plogi | plogi_pwwn | port [brief] | socket | sockexch | socknotify | socknport | vsan}

Syntax Description

bind	Displays FC2 socket bindings.
classf	Displays FC2 classf sessions.
exchange	Displays FC2 active exchanges.
exchresp	Displays FC2 active responder exchanges.
flogi	Displays FC2 FLOGI table.
nport	Displays FC2 local N ports.
plogi	Displays FC2 PLOGI sessions.
plogi_pwwn	Displays FC2 PLOGI pWWN entries.
port [**brief**]	Displays FC2 physical port table.
socket	Displays FC2 active sockets.
sockexch	Displays FC2 active exchanges for each socket.
socknotify	Displays FC2 local N port PLOGI/LOGO notifications for each socket.
socknport	Displays FC2 local nports per each socket.
vsan	Displays FC2 VSAN table.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays FC2 active socket information.

```
switch# show fc2 socket
SOCKET   REFCNT PROTOCOL      PID   RCVBUF  RMEM_USED     QLEN    NOTSK
b2a64b20        2        0     1421    65535           0        0        0
b2a647e0        3        0     1418   262142           0        0        0
b2a644a0        3        0     1417    65535           0        0        0
b2a64160        3        0     1417   262142           0        0        0
b294b180        3        0     1411    65535           0        0        0
b294ae40        3        0     1411    65535           0        0        0
b294a7c0        3        0     1410    65535           0        0        0
b294a480        2        7     1410    65535           0        0        0
b294a140        3        0     1409   262142           0        0        0
b278bb20        3        0     1409   262142           0        0        0
b278b4a0        3        0     1407    65535           0        0        0
b278b160        3        0     1407   256000           0        0        0
b278ae20        3        0     1407    65535           0        0        0
b1435b00        3        0     1408    65535           0        0        0
b1434e00        3        0     1406    65535           0        0        0
b1434ac0        3        0     1406   131072           0        0        0
b1434780        3        0     1406    65535           0        0        0
b1434440        2        0     1405   131072           0        0        0
b1434100        3        0     1405   262142           0        0 b1434440
b22e2420        2        0     1372    65535           0        0        0
...
```

The following example displays FC2 socket binding information.

```
switch# show fc2 bind
  SOCKET RULE   SINDEX   VSAN     D_ID     MASK TYPE  SUBTYPE M_VALUES
b23ba0c0   16  6081000      1        0        0    0 00:00:00 00:00:00:00:00:00:00:00
b2a647e0    7 ffffffff  65535   fffffd   ffffff   22 03:01:00 14:15:16:00:00:00:00:00
b294b180    7 ffffffff  65535   fffffd   ffffff    1 02:01:00 61:62:00:00:00:00:00:00
b294ae40    7 ffffffff  65535   fffc00   ffff00   22 01:01:00 1b:00:00:00:00:00:00:00
b294a7c0    7 ffffffff  65535   fffffd   ffffff    1 01:01:00 10:00:00:00:00:00:00:00
...
```

The following example displays FC2 local N port information.

```
switch# show fc2 nport
REF   VSAN   D_ID   MASK   FL   ST  IFINDEX   CF   TC 2-SO   IC   RC   RS   CS
 EE 3-SO   IC   RC   RS   CS   EE
  1  65535 fffffd ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  6  65535 fffc00 ffff00  18b    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  2  65535 fffffa ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
  1  65535 fffffc ffffff    3    0 ffffffff c800 0128 8000 0000 0000 2112 0064 0
008 8000 0000 0000 2112 0064 0000
...
```

The following example displays FC2 PLOGI session information.

```
switch# show fc2 plogi
HIX  ADDRESS   VSAN   S_ID   D_ID  IFINDEX   FL  STATE   CF   TC 2-SO   IC   RC
  RS   CS   EE 3-SO   IC   RC   RS   CS   EE EECNT TCCNT 2CNT 3CNT REFCNT
2157 af364064      1 fffc6c 123400 ffffffff 0000      0 0000 0001 8000 0000 2000
 0256 0001 0001 8000 0000 2000 0256 0001 0000     0     0    0    0      1
```

The following example displays FC2 physical port information.

```
switch# show fc2 port
 IX ST MODE EMUL   TXPKTS    TXDROP     TXERR    RXPKTS    RXDROP  R_A_TOV  E_D_TOV
F-SO   RC   RS   CS    EE 2-SO    RS 3-SO    RS
  0  D    1    0         0         0         0         0         0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  1  D    1    0         0         0         0         0         0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  2  D    1    0         0         0         0         0         0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  3  D    1    0         0         0         0         0         0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
  4  D    1    0         0         0         0         0         0    10000     2000
8000 0000 2112 0001 0001 8000 0256 8000 0256
...
```

The following example displays FC2 local N port PLOGI notifications for each socket.

```
switch# show fc2 socknotify
  SOCKET  ADDRESS REF   VSAN   D_ID   MASK   FL   ST  IFINDEX
b2a64160 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b294a7c0 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
af8a3a60 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
```

The following example displays FC2 local N ports for each socket.

```
switch# show fc2 socknport
  SOCKET  ADDRESS REF   VSAN   D_ID   MASK   FL   ST  IFINDEX
b2a64160 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b294b180 b27f0294   1  65535 fffffd ffffff    3    0 ffffffff
b294a7c0 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
b278ae20 b27f0134   2  65535 fffffa ffffff    3    0 ffffffff
b1434e00 b27f0134   2  65535 fffffa ffffff    3    0 ffffffff
b1434780 b27f0084   1  65535 fffffc ffffff    3    0 ffffffff
af8a3a60 b27f01e4   6  65535 fffc00 ffff00  18b    0 ffffffff
```

The following example displays FC2 VSAN table.

```
switch# show fc2 vsan
  VSAN     X_ID  E_D_TOV  R_A_TOV                      WWN
     1        4     2000    10000  20:01:00:05:30:00:58:1f
     2        1     2000    10000  20:02:00:05:30:00:58:1f
     3        1     2000    10000  20:03:00:05:30:00:58:1f
     4        1     2000    10000  20:04:00:05:30:00:58:1f
     5        1     2000    10000  20:05:00:05:30:00:58:1f
     6        1     2000    10000  20:06:00:05:30:00:58:1f
     7        1     2000    10000  20:07:00:05:30:00:58:1f
     8        1     2000    10000  20:08:00:05:30:00:58:1f
     9        1     2000    10000  20:09:00:05:30:00:58:1f
    10        1     2000    10000  20:0a:00:05:30:00:58:1f
    11        1     2000    10000  20:0b:00:05:30:00:58:1f
    12        1     2000    10000  20:0c:00:05:30:00:58:1f
    13        1     2000    10000  20:0d:00:05:30:00:58:1f
    14        1     2000    10000  20:0e:00:05:30:00:58:1f
    15        1     2000    10000  20:0f:00:05:30:00:58:1f
    16        1     2000    10000  20:10:00:05:30:00:58:1f
    17        1     2000    10000  20:11:00:05:30:00:58:1f
    18        1     2000    10000  20:12:00:05:30:00:58:1f
....
```

show fcalias

To display the FC alias (fcalias0 configuration, use the **show fcalias** command.

show fcalias [**name** *string*] [**vsan** *vsan-id*]

Syntax Description

name *string*	Specifies fcalias name. Maximum length is 64 characters.
vsan *vsan-id*	Specifies a VSAN ID. The range is from 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays fcalias configuration.

```
switch# show fcalias vsan 1
fcalias name Alias2 vsan 1

fcalias name Alias1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
```

show fcanalyzer

To display the list of hosts configured for a remote capture, use the **show fcanalyzer** command.

show fcanalyzer

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

The `DEFAULT` keyword shown with an `ActiveClient` entry specifies that the default port is used in attempting the connection to the client.

Examples

Displays Configured Hosts

```
switch# show fcanalyzer
PassiveClient = 10.21.0.3
PassiveClient = 10.21.0.3
ActiveClient = 10.21.0.3, DEFAULT
```

show fcc

To view FCC settings, use the **show fcc** commands.

show fcc [**statistics interface** {**fc** *slot*/*port* | **fcip** *fcip-id* | **iscsi** *slot*/*port*}]

Syntax Description

statistics interface	Displays FCC statistics for a specified interface.
fc *slot*/*port*	Specifies a Fibre Channel interface.
fcip *fcip-id*	Specifies an FCIP interface. The range is 1 to 255.
iscsi *slot*/*port*	Specifies an iSCSI interface.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

Displays Configured FCC Information

```
switch# show fcc
fcc is disabled
fcc is applied to frames with priority up to 4
```

show fcdomain

To display the Fibre Channel domain (fcdomain) information, use the **show fcdomain** command.

show fcdomain [**address-allocation** [**cache**] | **allowed** | **domain-list** | **fcid persistent** [**unused**] | **statistics** [**interface** {**fc** *slot/port* | **fcip** *fcip-id* | **iscsi** *slot/port*}]] [**vsan** *vsan-id*]

Syntax Description

address-allocation	Displays statistics for the fcid allocation
cache	The cache is used by the principle switch to reassign the FC IDs for a device (disk or host) that exited and reentered the fabric. In the cache content, VSAN refers to the VSAN that contains the device, WWN refers to the device that owned the FC IDs, and mask refers to a single or entire area of FC IDs.
allowed	Displays a list of allowed domain IDs.
domain-list	Displays list of domain ids granted by the principal sw
fcid persistent	Displays persistent FCIDs (across reboot)
statistics interface	Displays the statistics of fcdomain
fc *slot/port*	Specifies a Fibre Channel interface.
fcip *fcip-id*	Specifies an FCIP interface. The range is 1 to 255.
iscsi *slot/port*	Specifies an iSCSI interface.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093).

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

Issuing the **show fcdomain** with no arguments displays all VSANs. The VSANs should be active or you will get an error.

Examples

The following example displays the fcdomain information for VSAN 1.

```
switch# show fcdomain vsan 1
The local switch is a Subordinated Switch.

Local switch run time information:
        State: Stable
        Local switch WWN:    20:01:00:05:30:00:51:1f
        Running fabric name: 10:00:00:60:69:22:32:91
        Running priority: 128
        Current domain ID: 0x64(100) ß verify domain id
```

```
Local switch configuration information:
        State: Enabled
        Auto-reconfiguration: Disabled
        Contiguous-allocation: Disabled
        Configured fabric name: 41:6e:64:69:61:6d:6f:21
        Configured priority: 128
        Configured domain ID: 0x64(100) (preferred)

Principal switch run time information:
        Running priority: 2

Interface               Role          RCF-reject
----------------    -------------    ------------
fc2/1               Downstream       Disabled
fc2/2               Downstream       Disabled
fc2/7               Upstream         Disabled
----------------    -------------    ------------
```

The following example displays the fcdomain domain list information for VSAN 1.

```
switch# show fcdomain domain-list vsan 1

Number of domains: 5
Domain ID              WWN
---------    -----------------------
 0x61(97)    10:00:00:60:69:50:0c:fe
 0x62(98)    20:01:00:05:30:00:47:9f
 0x63(99)    10:00:00:60:69:c0:0c:1d
0x64(100)    20:01:00:05:30:00:51:1f [Local]
0x65(101)    10:00:00:60:69:22:32:91 [Principal]
---------    -----------------------
```

The following example displays the allowed domain ID lists

```
switch# show fcdomain allowed vsan 1
Assigned or unallowed domain IDs: 1-96,100,111-239.
[Interoperability Mode 1] allowed domain IDs: 97-127.
[User] configured allowed domain IDs: 50-110.
```

show fcdroplatency

To display the configured Fibre Channel latency parameters, use the **show fcdroplatency** command.

show fcdroplatency [**network** | **switch**]

Syntax Description

network	Network latency in milliseconds.
switch	Switch latency in milliseconds.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the configured Fibre Channel latency parameters.

```
switch# show fcdroplatency
switch latency value:4000 milliseconds
network latency value:5000 milliseconds
```

show fcflow stats

To display the configured Fibre Channel flow (fcflow) information, use the **show fcflow stats** command.

show fcflow stats [**aggregated** | **usage**] **module** *slot* [**index** *flow-index*]

Syntax Description

aggregated	Displays aggregated fcflow statistics.
usage	Displays flow index usage
module *slot*	Displays fcflow statistics for a module in the specified slot.
index *flow-index*	Specifies a fcflow index.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays aggregated fcflow details for the specified module.

```
switch# show fcflow stats aggregated module 2
Idx  VSAN # frames # bytes
---- ---- -------- -------
0000 4    387,653  674,235,875
0001 6    34,402   2,896,628
```

The following example displays fcflow details for the specified module.

```
switch# show fcflow stats module 2
Idx  VSAN D ID        S ID        mask      # frames # bytes
---- ---- ----------- ----------- -----     -------- -------
0000 4    032.001.002 007.081.012 ff.ff.ff   387,653  674,235,875
0001 6    004.002.001 019.002.004 ff.00.00   34,402   2,896,628
```

The following example displays fcflow index usage for the specified module.

```
switch# show fcflow stats usage module 2
2 flows configured
configured flow : 3,7
```

show fcfwd

To display the configured fcfwd tables and statistics, use the **show fcfwd** command.

show fcfwd {idxmap [**interface-toport** | **port-to-interface** | **statistics**] | **pcmap** [**interface**] | **sfib** [**multicast** | **statistics** | **unicast**] | **spanmap** [**rx** | **tx**]**}**

Syntax Description

idxmap	Displays FC forward index tables.
interface-to-port	Displays interface index to port index table.
port-to-interface	Displays port index to interface index table.
statistics	Displays index table statistics.
pcmap	Displays FC forward PortChannel table.
interface	Displays PortChannel table for an interface.
sfib	Displays software forwarding tables.
multicast	Displays multicast software forwarding tables.
statistics	Displays software forwarding statistics.
unicast	Displays unicast software forwarding tables.
spanmap	Displays SPAN map tables.
rx	Displays SPAN map table in ingress -rx direction.
tx	Displays SPAN map table in egress -tx direction.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays fcfwd SPAN map receive information.

```
switch# show fcfwd spanmap rx
SPAN source information: size [c8]
dir source               vsan   bit   drop_thresh destination
```

show fcip profile

To display the status of an interface at any time, usedisplays the **show fcip profile** command.

show fcip profile [*profile-id* | **all**]

Syntax Description

profile-id	Displays the information for the specified profile. The range is 1 to 255.
all	Displays detailed information for all profiles.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following example displays all FCIP profiles.

```
switch# show fcip profile
---------------------------------------------------
ProfileId       Ipaddr          TcpPort
---------------------------------------------------
1               41.1.1.2        3225
2               10.10.100.154   3225
3               43.1.1.2        3225
4               44.1.1.100      3225
6               46.1.1.2        3225
7               47.1.1.2        3225
```

The following example displays information for a specified FCIP profile.

```
switch# show fcip profile 7
FCIP Profile 7
    Internet Address is 47.1.1.2 (interface GigabitEthernet4/7)
    Listen Port is 3225
    TCP parameters
        SACK is disabled
        PMTU discovery is enabled, reset timeout is 3600 sec
        Keep alive is 60 sec
        Minimum retransmission timeout is 300 ms
        Maximum number of re-transmissions is 4
        Send buffer size is 0 KB
        Maximum allowed bandwidth is 1000000 kbps
        Minimum available bandwidth is 15000 kbps
        Estimated round trip time is 1000 usec
```

show fcns database

To display the results of the discovery, or to display the name server database for a specified VSAN or for all VSANs, use the **show fcns database** command.

show fcns database {detail [**vsan** *vsan-id*] | **domain** *domain-id* [**detail**] [**vsan** *vsan-range*] | **fcid** *fcid-id* [**detail**] **vsan** *vsan-range* | **local** [**detail**] [**vsan** *vsan-range*] | **vsan** *vsan-id*}

Syntax Description

detail	Displays all objects in each entry.
vsan *vsan-id*	Displays entries for a specified VSAN ID. The range is 1 to 4093.
domain *domain-id*	Displays entries in a domain.
fcid *fcid-id*	Displays entry for the given port.
local	Displays local entries.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines

The discovery can take several minutes to complete, especially if the fabric is large fabric or if several devices are slow to respond.

Virtual enclosure ports can be viewed using the **show fcns database** command.

Examples

The following example displays the contents of the FCNS databse:

```
switch# show fcns database
VSAN 1:
------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
------------------------------------------------------------------------
0x020101    N     22:04:00:05:30:00:35:e1 (Cisco)         scsi-fcp:init isc..w <--iSCSI
0x020102    N     22:02:00:05:30:00:35:e1 (Cisco)         scsi-fcp:init isc..w initiator
0x0205d4    NL    21:00:00:04:cf:da:fe:c6 (Seagate)       scsi-fcp:target
0x0205d5    NL    21:00:00:04:cf:e6:e4:4b (Seagate)       scsi-fcp:target
0x0205d6    NL    21:00:00:04:cf:e6:21:ac (Seagate)       scsi-fcp:target
0x0205d9    NL    21:00:00:04:cf:e6:19:9b (Seagate)       scsi-fcp:target
0x0205da    NL    21:00:00:04:cf:e6:19:62 (Seagate)       scsi-fcp:target
0x0205dc    NL    21:00:00:04:cf:e6:e9:82 (Seagate)       scsi-fcp:target
0x0205e0    NL    21:00:00:04:cf:e6:21:06 (Seagate)       scsi-fcp:target
0x0205e1    NL    21:00:00:04:cf:e6:e0:eb (Seagate)       scsi-fcp:target

Total number of entries = 10

VSAN 2:
------------------------------------------------------------------------
```

```
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0xef0001    N     22:02:00:05:30:00:35:e1 (Cisco)         scsi-fcp:init isc..w

Total number of entries = 1

VSAN 3:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0xed0001    N     22:02:00:05:30:00:35:e1 (Cisco)         scsi-fcp:init isc..w

Total number of entries = 1
```

The following example displays the detailed contents of the FCNS database.

```
switch# show fcns database detail
------------------------
VSAN:1     FCID:0x020101
------------------------
port-wwn (vendor)     :22:04:00:05:30:00:35:e1 (Cisco)
node-wwn              :22:03:00:05:30:00:35:e1
class                 :2,3
node-ip-addr          :10.2.2.12
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
symbolic-port-name    :
symbolic-node-name    :iqn.1991-05.com.microsoft:oasis2-dell
port-type             :N
port-ip-addr          :0.0.0.0
fabric-port-wwn       :22:01:00:05:30:00:35:de
hard-addr             :0x000000
------------------------
VSAN:1     FCID:0x020102
------------------------
port-wwn (vendor)     :22:02:00:05:30:00:35:e1 (Cisco)
node-wwn              :22:01:00:05:30:00:35:e1
class                 :2,3
node-ip-addr          :10.2.2.11
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
symbolic-port-name    :
symbolic-node-name    :iqn.1987-05.com.cisco.01.14ac33ba567f986f174723b5f9f2377
port-type             :N
port-ip-addr          :0.0.0.0
fabric-port-wwn       :22:01:00:05:30:00:35:de
hard-addr             :0x000000

...
Total number of entries = 10
==========================================================================
------------------------
VSAN:2     FCID:0xef0001
------------------------
port-wwn (vendor)     :22:02:00:05:30:00:35:e1 (Cisco)
node-wwn              :22:01:00:05:30:00:35:e1
class                 :2,3
node-ip-addr          :10.2.2.11
ipa                   :ff ff ff ff ff ff ff ff
fc4-types:fc4_features:scsi-fcp:init iscsi-gw
symbolic-port-name    :
symbolic-node-name    :iqn.1987-05.com.cisco.01.14ac33ba567f986f174723b5f9f2377
port-type             :N
port-ip-addr          :0.0.0.0
```

```
fabric-port-wwn       :22:01:00:05:30:00:35:de
hard-addr             :0x000000

Total number of entries = 1


...
```

The following example displays the management VSAN (VSAN 2).

```
switch# show fcns database vsan 2
VSAN 2:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x6d0001    N     10:00:00:05:30:00:94:9f (Cisco)         ipfc
0x6d0002    N     10:00:00:05:30:00:94:a0 (Cisco)         ipfc virtual:..c_port
0x6d0003    N     24:15:00:05:30:00:94:a0 (Cisco)         virtual:volume_owner
...
Total number of entries = 24
```

The following example displays the database for all configured VSANs.

```
switch# show fcns database
VSAN 2:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x6d0001    N     10:00:00:05:30:00:94:9f (Cisco)         ipfc
0x6d0002    N     10:00:00:05:30:00:94:a0 (Cisco)         ipfc virtual:..c_port
0x6d0003    N     24:15:00:05:30:00:94:a0 (Cisco)         virtual:volume_owner
...
Total number of entries = 24
VSAN 3:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x650001    N     24:0c:00:05:30:00:94:a0 (Cisco)         scsi-fcp:init vir..t
...
0x720101    NL    21:00:00:20:37:65:1c:cb (Company)       scsi-fcp
...
Total number of entries = 30
VSAN 4:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x6b0001    N     23:26:00:05:30:00:59:20 (Cisco)         scsi-fcp:init vir..t
...
0x7800b5    NL    22:00:00:20:37:46:78:97 (Company)       scsi-fcp
...
0x780100    N     50:06:04:82:bf:d0:cf:4b (Company)           scsi-fcp 250
...
Total number of entries = 27
VSAN 5:
--------------------------------------------------------------------------
FCID        TYPE  PWWN                    (VENDOR)        FC4-TYPE:FEATURE
--------------------------------------------------------------------------
0x6f0001    N     23:43:00:05:30:00:59:20 (Cisco)         scsi-fcp:target vi..
...
```

Related Commands

Command	Description
asm mgmt-vsan	Displays the CPP interface configuration for a specified interface.

show fcns statistics

To display the statistical information for a specified VSAN or for all VSANs, use the **show fcns statistics** command.

show fcns statistics [**detail**] [**vsan** *vsan-id*]

Syntax Description

detail	Displays detailed statistics.
vsan *vsan-id*	Displays statistics for the specified VSAN ID. The range is 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

```
switch# show fcns statistics
registration requests received = 27
deregistration requests received = 0
queries received = 57
queries sent = 10
reject responses sent = 14
RSCNs received = 0
RSCNs sent = 0
switch#
```

show fcroute

Use the **show fcroute** command to view specific information about existing Fibre Channel and FSPF configurations.

show fcroute {**distance** | **label** [*label*] **vsan** *vsan-id* | **multicast** [*fc-id* **vsan** *vsan-id* | **vsan** *vsan-id*] | **summary** [**vsan** *vsan-id*] | **unicast** [[**host**] *fc-id fc-mask* **vsan** *vsan-id* | **vsan** *vsan-id*]}

Syntax Description

distance	Displays FC route preference.
label	Displays label routes.
multicast	Displays FC multicast routes.
summary	Displays FC routes summary.
unicast	Displays FC unicast routes.
vsan *vsan-id*	The ID of the VSAN (from 1 to 4093).
fcid-id	The Fibre Channel ID.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

When the number of routes are displayed in the command output, both visible and hidden routes are included in the total number of routes.

Examples

The following example displays administrative distance.

```
switch# show fcroute distance

        Route
UUID    Distance        Name
----    --------        ----
10      20              RIB
22      40              FCDOMAIN
39      80              RIB-CONFIG
12      100             FSPF
17      120             FLOGI
21      140             TLPM
14      180             MCAST
64      200             RIB-TEST
```

The following example displays multicast routing information.

```
switch# show fcroute multicast
VSAN FC ID    # Interfaces
---- -------- ------------
1    0xffffff 0
2    0xffffff 1
3    0xffffff 1
4    0xffffff 0
5    0xffffff 0
6    0xffffff 0
7    0xffffff 0
8    0xffffff 0
9    0xffffff 0
10   0xffffff 0
```

The following example displays FCID information for a specified VSAN.

```
switch# show fcroute multicast vsan 3

VSAN FC ID    # Interfaces
---- -------- ------------
3    0xffffff 1
```

The following example displays FCID and interface information for a specified VSAN.

```
switch# show fcroute multicast 0xffffff vsan 2

VSAN FC ID    # Interfaces
---- -------- ------------
2    0xffffff 1
  fc1/1
```

The following example displays unicast routing information.

```
switch# show fcroute unicast
D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                  # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   1    0x010101 0xffffff 0x00 0x00 D P A 1      10
static   2    0x111211 0xffffff 0x00 0x00 R P A 1      10
fspf     2    0x730000 0xff0000 0x00 0x00 D P A 4      500
fspf     3    0x610000 0xff0000 0x00 0x00 D P A 4      500
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040102 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040103 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040104 0xffffff 0x00 0x00 R P A 1      103
static   4    0x111211 0xffffff 0x00 0x00 D P A 1      10
```

The following example displays unicast routing information for a specified VSAN.

```
switch# show fcroute unicast vsan 4

D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                  # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040102 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040103 0xffffff 0x00 0x00 R P A 1      103
static   4    0x040104 0xffffff 0x00 0x00 R P A 1      103
static   4    0x111211 0xffffff 0x00 0x00 D P A 1      10
```

The following example displays unicast routing information for a specified FCID.

```
switch# show fcroute unicast 0x040101 0xffffff vsan 4

D:direct R:remote P:permanent V:volatile A:active N:non-active
                                                    # Next
Protocol VSAN    FC ID/Mask     RCtl/Mask Flags Hops   Cost
-------- ---- -------- -------- ---- ---- ----- ------ ----
static   4    0x040101 0xffffff 0x00 0x00 R P A 1      103
  fc1/2 Domain 0xa6(166)
```

The following example displays route database information.

```
switch# show fcroute summary

FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast   Mcast   Label   Last Modified Time
----    -----   -----   -----   ------------------
1       2       1       0       Tue Oct 29 18:07:02 2002
2       3       1       0       Tue Oct 29 18:33:24 2002
3       2       1       0       Tue Oct 29 18:10:07 2002
4       6       1       0       Tue Oct 29 18:31:16 2002
5       1       1       0       Tue Oct 29 01:34:39 2002
6       1       1       0       Tue Oct 29 01:34:39 2002
7       1       1       0       Tue Oct 29 01:34:39 2002
8       1       1       0       Tue Oct 29 01:34:39 2002
9       1       1       0       Tue Oct 29 01:34:39 2002
10      1       1       0       Tue Oct 29 01:34:39 2002
Total   19      10      0
```

The following example displays route database information for a specified VSAN.

```
switch# show fcroute summary vsan 4

FC route database created Tue Oct 29 01:24:23 2002
VSAN    Ucast   Mcast   Label   Last Modified Time
----    -----   -----   -----   ------------------
4       6       1       0       Tue Oct 29 18:31:16 2002
Total   6       1       0
```

show fcs

Use the **show fcs** commands to display the status of the fabric configuration.

show fcs {database [vsan *vsan-id*] | **ie** [**nwwn** *wwn*] **vsan** *vsan-id* | **platform** [**name** *string*] **vsan** *vsan-id* | **port** [**pwwn** *wwn*] **vsan** *vsan-id*] | **statistics vsan** *vsan-id* | **vsan}**

Syntax Description

database	Displays local database of FCS.
ie	Displays Interconnect Element Objects Information.
nwwn *wwn*	Specifies a node WWN id. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
platform	Displays Platform Objects Information.
name *string*	Specifies a platform name. Maximum length is 255 characters.
port	Displays Port Objects Information.
pwwn *wwn*	Specifies a port WWN id. The format is *hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*:*hh*.
statistics	Displays statistics for FCS packets.
vsan	Displays list of all the VSANs and plat-check-mode for each.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays FCS database information.

```
switch# show fcs database

FCS Local Database in VSAN: 1
------------------------------
Switch WWN               : 20:01:00:05:30:00:16:df
Switch Domain Id         : 0x7f(127)
Switch Mgmt-Addresses    : snmp://172.22.92.58/eth-ip
                           http://172.22.92.58/eth-ip
Fabric-Name              : 20:01:00:05:30:00:16:df
Switch Logical-Name      : 172.22.92.58
Switch Information List  : [Cisco Systems*DS-C9509*0*20:00:00:05:30:00
Switch Ports:
-------------------------------------------------------------------
Interface  pWWN                      Type     Attached-pWWNs
-------------------------------------------------------------------
fc2/1      20:41:00:05:30:00:16:de  TE       20:01:00:05:30:00:20:de
```

```
fc2/2      20:42:00:05:30:00:16:de  Unknown  None
fc2/17     20:51:00:05:30:00:16:de  TE       20:0a:00:05:30:00:20:de

FCS Local Database in VSAN: 5
------------------------------
Switch WWN               : 20:05:00:05:30:00:12:5f
Switch Domain Id         : 0xef(239)
Switch Mgmt-Addresses    : http://172.22.90.171/eth-ip
                           snmp://172.22.90.171/eth-ip
                           http://10.10.15.10/vsan-ip
                           snmp://10.10.15.10/vsan-ip
Fabric-Name              : 20:05:00:05:30:00:12:5f
Switch Logical-Name      : 172.22.90.171
Switch Information List  : [Cisco Systems*DS-C9509**20:00:00:05:30:00:12:5e]
Switch Ports:
-------------------------------------------------------------------
Interface  pWWN                      Type     Attached-pWWNs
-------------------------------------------------------------------
fc3/1      20:81:00:05:30:00:12:5e  TE       22:01:00:05:30:00:12:9e
fc3/2      20:82:00:05:30:00:12:5e  TE       22:02:00:05:30:00:12:9e
fc3/3      20:83:00:05:30:00:12:5e  TE       22:03:00:05:30:00:12:9e
```

The following example displays Interconnect Element object information for a specific VSAN.

```
switch# show fcs ie vsan  1

IE List for VSAN: 1
-------------------------------------------------------------------
IE-WWN                   IE-Type                          Mgmt-Id
-------------------------------------------------------------------
20:01:00:05:30:00:16:df  Switch (Local)                   0xfffc7f
20:01:00:05:30:00:20:df  Switch (Adjacent)                0xfffc64
[Total 2 IEs in Fabric]
```

This command displays Interconnect Element object information for a specific WWN.

```
switch# show fcs ie nwwn 20:01:00:05:30:00:16:df vsan 1
IE Attributes
-------------
Domain-Id = 0x7f(127)
Management-Id = 0xfffc7f
Fabric-Name = 20:01:00:05:30:00:16:df
Logical-Name = 172.22.92.58
Management Address List =
        snmp://172.22.92.58/eth-ip
        http://172.22.92.58/eth-ip
Information List:
        Vendor-Name = Cisco Systems
        Model Name/Number = DS-C9509
        Release-Code = 0
```

This command displays platform information.

```
switch# show fcs platform name SamplePlatform vsan 1
Platform Attributes
-------------------
Platform Node Names:
        11:22:33:44:55:66:77:88
Platform Type = Gateway
Platform Management Addresses:
        1.1.1.1
```

This command displays platform information within a specified VSAN.

```
switch# show fcs platform vsan 1
Platform List for VSAN: 1
Platform-Names
--------------
SamplePlatform
[Total 1 Platforms in Fabric]
```

This command displays FCS port information within a specified VSAN.

```
switch# show fcs port vsan 24
Port List in VSAN: 24
                -- IE WWN: 20:18:00:05:30:00:16:df  --
------------------------------------------------------------------------
Port-WWN                 Type      Module-Type            Tx-Type
------------------------------------------------------------------------
20:41:00:05:30:00:16:de  TE_Port   SFP with Serial Id      Shortwave Laser

20:51:00:05:30:00:16:de  TE_Port   SFP with Serial Id      Shortwave Laser

[Total 2 switch-ports in IE]
                -- IE WWN: 20:18:00:05:30:00:20:df  --
------------------------------------------------------------------------
Port-WWN                 Type      Module-Type            Tx-Type
------------------------------------------------------------------------
20:01:00:05:30:00:20:de  TE_Port   SFP with Serial Id      Shortwave Laser

20:0a:00:05:30:00:20:de  TE_Port   SFP with Serial Id      Shortwave Laser

[Total 2 switch-ports in IE]
```

This command displays ports within a specified WWN.

```
switch# show fcs port pwwn 20:51:00:05:30:00:16:de vsan 24
Port Attributes
---------------
Port Type = TE_Port
Port Number = 0x1090000
Attached-Port-WWNs:
        20:0a:00:05:30:00:20:de
Port State = Online
```

This command displays FCS statistics.

```
switch# show fcs statistics

FCS Statistics for VSAN: 1
---------------------------
FCS Rx Get Reqs   :2
FCS Tx Get Reqs   :7
FCS Rx Reg Reqs   :0
FCS Tx Reg Reqs   :0
FCS Rx Dereg Reqs :0
FCS Tx Dereg Reqs :0
FCS Rx RSCNs      :0
FCS Tx RSCNs      :3
FCS Rx RJTs       :3
FCS Tx RJTs       :0
FCS Rx ACCs       :4
FCS Tx ACCs       :2
FCS No Response   :0
FCS Retransmit    :0

FCS Statistics for VSAN: 30
---------------------------
FCS Rx Get Reqs   :2
FCS Tx Get Reqs   :2
FCS Rx Reg Reqs   :0
FCS Tx Reg Reqs   :0
FCS Rx Dereg Reqs :0
FCS Tx Dereg Reqs :0
FCS Rx RSCNs      :0
FCS Tx RSCNs      :0
FCS Rx RJTs       :0
FCS Tx RJTs       :0
FCS Rx ACCs       :2
FCS Tx ACCs       :2
FCS No Response   :0
FCS Retransmit    :0
```

show fcsp

To display the status of the Fibre Channel Security Protocol (FC-SP) configuration, use the **show fcsp** commands.

show fcsp [**asciiwwn** *ascii-wwn* | **dhchap** [**database**] | **interface fc** *slot/port* [**statistics** | **wwn**] | **fcip** *interface-number* [**statistics** | **wwn**]]

Syntax Description

asciiwwn *ascii-wwn*	Displays the ASCII representation of the WWN used with AAA server.
dhchap	Displays the DHCHAP hash algorithm status.
database	Displays the contents of the local DHCHAP database.
interface	Displays the FC-SP settings for a FC or FCIP interface.
fc *slot/port*	Displays the Fibre Channel interface in the specified slot and port.
fcip *interface-number*	Displays the description of the specified FCIP interface from 1 to 255.
statistics	Displays the statistics for the specified interface.
wwn	Displays the FC-SP identity of the other device.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

The following example displays DHCHAP configurations in FC interfaces.

```
switch# show fcsp interface fc1/9

fc1/9:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
```

The following example displays DHCHAP statistics for a FC interfaces.

```
switch# show fcsp interface fc1/9 statistics

fc1/9:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
        Statistics:
        FC-SP Authentication Succeeded:5
        FC-SP Authentication Failed:0
        FC-SP Authentication Bypassed:0
```

The following example displays the FC-SP WWN of the device connected through a specified interface.

```
switch# show fcsp interface fc 2/1 wwn

fc2/1:
        fcsp authentication mode:SEC_MODE_ON
        Status: Successfully authenticated
        Other device's WWN:20:00:00:e0:8b:0a:5d:e7
```

The following example displays hash algorithm and DHCHAP groups configured for the local switch.

```
switch# show fcsp dhchap
Supported Hash algorithms (in order of preference):
DHCHAP_HASH_MD5
DHCHAP_HASH_SHA_1

Supported Diffie Hellman group ids (in order of preference):
DHCHAP_GROUP_NULL
DHCHAP_GROUP_1536
DHCHAP_GROUP_1024
DHCHAP_GROUP_1280
DHCHAP_GROUP_2048
```

The following example displays the DHCHAP local password database.

```
switch# show fcsp dhchap database
DHCHAP Local Password:
        Non-device specific password:mypassword1
        Password for device with WWN:29:11:bb:cc:dd:33:11:22 is pjoalf
        Password for device with WWN:30:11:bb:cc:dd:33:11:22 is mypassword

Other Devices' Passwords:
        Password for device with WWN:00:11:22:33:44:aa:bb:cc is NewPassword
```

The following example displays he ASCII representation of the device WWN.

```
switch# show fcsp asciiwwn 30:11:bb:cc:dd:33:11:22
Ascii representation of WWN to be used with AAA servers:0x_3011bbccdd331122
```

Related Commands

Command	Description
fcsp enable	Enables the FC-SP feature for this switch.

show fctimer

To display the Fibre Channel timers, use the **show fctimer** command.

show fctimer [**d_s_tov** | **e_d_tov** | **f_s_tov** | **r_a_tov** | **vsan** *vsan-id*]

Syntax Description

d_s_tov	Displays the distributed services time out value (D_S_TOV) in milliseconds.
e_d_tov	Displays the error detection time out value (E_D_TOV) in milliseconds.
f_s_tov	Displays the fabric stability time out value (F_S_TOV) in milliseconds.
r_a_tov	Dispalys the resource allocation time out value (R_A_TOV) in milliseconds.
vsan *vsan-id*	The ID of the VSAN (from 1 to 4093).

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

The following example displays configured global TOVs.

```
switch# show fctimer
F_S_TOV   D_S_TOV   E_D_TOV   R_A_TOV
----------------------------------------
5000 ms   5000 ms   2000 ms   10000 ms
```

The following example displays configured TOVs for a specified VSAN.

```
switch# show fctimer vsan 10
vsan no.  F_S_TOV   D_S_TOV   E_D_TOV   R_A_TOV
-------------------------------------------------
10        5000 ms   5000 ms   3000 ms   10000 ms
```

show fdmi

To display the Fabric-Device Management Interface (FDMI) database information, use the **show fdmi** command.

show fdmi database [**detail** [**hba-id** [*hba-id* **vsan** *vsan-id* | **vsan** *vsan-id*] | **vsan** *vsan-id*]

Syntax Description

fdmi	Accesses the FDMI commands.
database	Displays the FDMI database contents.
detail	Specifies detailed FDMI information.
hba-id	Displays detailed information for the specified HBA entry.
hba-id	Displays detailed information for the specified HBA entry.
vsan *vsan-id*	Specifies FDMI information for the specified VSAN ranging from 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

The following example displays all HBA management servers.

```
switch# show fdmi database
Registered HBA List for VSAN 1
  10:00:00:00:c9:32:8d:77
  21:01:00:e0:8b:2a:f6:54
switch# show fdmi database detail
Registered HBA List for VSAN 1
-------------------------------
HBA-ID: 10:00:00:00:c9:32:8d:77
-------------------------------
Node Name        :20:00:00:00:c9:32:8d:77
Manufacturer     :Emulex Corporation
Serial Num       :0000c9328d77
Model            :LP9002
Model Description:Emulex LightPulse LP9002 2 Gigabit PCI Fibre Channel Adapter
Hardware Ver     :2002606D
Driver Ver       :SLI-2 SW_DATE:Feb 27 2003, v5-2.20a12
ROM Ver          :3.11A0
Firmware Ver     :3.90A7
OS Name/Ver      :Window 2000
CT Payload Len   :1300000
  Port-id: 10:00:00:00:c9:32:8d:77
-------------------------------
```

```
HBA-ID: 21:01:00:e0:8b:2a:f6:54
------------------------------
Node Name         :20:01:00:e0:8b:2a:f6:54
Manufacturer      :QLogic Corporation
Serial Num        :\74262
Model             :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver      :FC5010409-10
Driver Ver        :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver           :1.24
Firmware Ver      :03.02.13.
OS Name/Ver       :500
CT Payload Len    :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

The following example displays VSAN1-specific FDMI information.

```
switch# show fdmi database detail vsan 1
Registered HBA List for VSAN 1
------------------------------
HBA-ID: 10:00:00:00:c9:32:8d:77
------------------------------
Node Name         :20:00:00:00:c9:32:8d:77
Manufacturer      :Emulex Corporation
Serial Num        :0000c9328d77
Model             :LP9002
Model Description:Emulex LightPulse LP9002 2 Gigabit PCI Fibre Channel Adapter
Hardware Ver      :2002606D
Driver Ver        :SLI-2 SW_DATE:Feb 27 2003, v5-2.20a12
ROM Ver           :3.11A0
Firmware Ver      :3.90A7
OS Name/Ver       :Window 2000
CT Payload Len    :1300000
  Port-id: 10:00:00:00:c9:32:8d:77
------------------------------
HBA-ID: 21:01:00:e0:8b:2a:f6:54
------------------------------
Node Name         :20:01:00:e0:8b:2a:f6:54
Manufacturer      :QLogic Corporation
Serial Num        :\74262
Model             :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver      :FC5010409-10
Driver Ver        :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver           :1.24
Firmware Ver      :03.02.13.
OS Name/Ver       :500
CT Payload Len    :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

The following example displays details for the specified HBA entry.

```
switch# show fdmi database detail Hba-id 21:01:00:e0:8b:2a:f6:54 vsan 1

Node Name         :20:01:00:e0:8b:2a:f6:54
Manufacturer      :QLogic Corporation
Serial Num        :\74262
Model             :QLA2342
Model Description:QLogic QLA2342 PCI Fibre Channel Adapter
Hardware Ver      :FC5010409-10
Driver Ver        :8.2.3.10 Beta 2 Test 1 DBG (W2K VI)
ROM Ver           :1.24
Firmware Ver      :03.02.13.
OS Name/Ver       :500
```

```
CT Payload Len   :2040
  Port-id: 21:01:00:e0:8b:2a:f6:54
```

show ficon

To display configured FICON information, use the **show ficon** command.

show ficon [**control-device sb3** [**vsan** *vsan-id*] | **first-available port-number** | **vsan** *vsan-id* [**allegiance** | **directory-history** [**key-counter** *value*] | **file** {**all** | **name** *filename* [**portaddress** *port*]} | **interface** {**fc** *slot/port* | **fcip** *fcip-id* | **port-channel** *port*} | **portaddress** [*port* [**counters**]] [**brief**] [**installed**]]

Syntax Description

control-device sb3	Displays FICON control device information.
vsan *vsan-id*	Specifies FICON information for the specified VSAN ranging from 1 to 4093.
first-available port-number	Displays the available port numbers
allegiance	Displays FICON device allegiance information.
directory-history	Displays FICON directory history.
key-counter *value*	Specifies a key counter.
file	Displays FICON information for a file.
all	Specifies all files.
name *filename*	Specifies the name for a file.
portaddress *port*	Specifies a port address for a file.
interface	Displays FICON information for an interface.
fc *slot/port*	Specifies a Fibre Channel interface.
fcip *fcip-id*	Specifies an FC IP interface.
port-channel *port*	Specifies a PortChannel interface.
counters	Displays counter information for the port address.
brief	Displays brief FICON information for the port address.
installed	Displays FICON information for the installed port address.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

If FICON is not enabled on a VSAN, you will not be able to view FICON configuration information for that VSAN.

Examples

The following example displays configured FICON information

```
switch# show ficon
Ficon information for VSAN 20
  Ficon is online
  VSAN is active
  Host port control is Enabled
  Host offline control is Enabled
  User alert mode is Enabled
  SNMP port control is Enabled
  Host set director timestamp is Enabled
  Active=Saved is Disabled
  Number of implemented ports are 240
  Key Counter is 73723
  FCID last byte is 0
  Date/Time is set by host to Sun Jun 26 00:04:06.991999 1904
  Device allegiance is locked by Host
  Codepage is us-canada
  Saved configuration files
    IPL
    _TSIRN00
```

The following example displays port address information

```
switch# show ficon vsan 2 portaddress
Port Address 1 is not installed in vsan 2
    Port number is 1, Interface is fc1/1
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255

Port Address 2 is not installed in vsan 2
    Port number is 2, Interface is fc1/2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255

...
Port Address 239 is not installed in vsan 2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255

Port Address 240 is not installed in vsan 2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
```

The following example displays port address information in a brief format.

```
switch# show ficon vsan 2 portaddress 50-55 brief
--------------------------------------------------------------------------------
Port    Port    Interface          Admin     Status           Oper   FCID
Address Number                     Blocked                    Mode
--------------------------------------------------------------------------------
50      50      fc2/18             on     fcotAbsent       --     --
51      51      fc2/19             off       fcotAbsent       --     --
52      52      fc2/20             off       fcotAbsent       --     --
53      53      fc2/21             off       fcotAbsent       --     --
54      54      fc2/22             off       notConnected     --     --
55      55      fc2/23             off       up               FL     0xea0000
56     55                        off       up               FL     0xea0000
```

The following example displays port address counter information.

```
switch# show ficon vsan 20 portaddress 8 counters
Port Address 8(0x8) is up in vsan 20
    Port number is 8(0x8), Interface is fc1/8
    Version presented 1, Counter size 32b
    242811 frames input, 9912794 words
      484 class-2 frames, 242302 class-3 frames
      0 link control frames, 0 multicast frames
      0 disparity errors inside frames
      0 disparity errors outside frames
      0 frames too big, 0 frames too small
      0 crc errors, 0 eof errors
      0 invalid ordered sets
      0 frames discarded c3
      0 address id errors
    116620 frames output, 10609188 words
      0 frame pacing time
    0 link failures
    0 loss of sync
    0 loss of signal
    0 primitive seq prot errors
    0 invalid transmission words
    1 lrr input, 0 ols input, 5 ols output
    0 error summary
```

The following example displays the contents of the specified FICON configuration file

```
switch# show ficon vsan 3 file IPL
FICON configuration file IPL      in vsan 3
    Port address 1
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255

    Port address 2
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255

    Port address 3
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255

    Port address 4
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255

...
Port address 80
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255

    Port address 254
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,81-253,255
```

The following example displays all FICON configuration files

```
switch# show ficon vsan 2
Ficon information for VSAN 2
  Ficon is enabled
  VSAN is active
  Host control is Enabled
  Host offline control is Enabled
  Clock alert mode is Disabled
  User alert mode is Disabled
  SNMP control is Disabled
  Active=Saved is Disabled
  Number of implemented ports are 240
  Key Counter is 9
  FCID last byte is 0
  Date/Time is same as system time (Sun Dec 14 01:26:30.273402 1980)
  Device Allegiance not locked
  Codepage is us-canada
  Saved configuration files
    IPL
    IPLFILE1
```

The following example displays the specified port addresses for a FICON configuration file

```
switch# show ficon vsan 2 file iplfile1 portaddress 1-7
FICON configuration file IPLFILE1 in vsan 2
    Port address 1
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255

    Port address 2
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255

    Port address 3
        Port name is P3
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
...
    Port address 7
        Port name is
        Port is not blocked
        Prohibited port addresses are 0,241-253,255
```

The following example displays the specified port address when FICON is enabled

```
switch# show ficon vsan 2 portaddress 55
Port Address 55 is not installed in vsan 2
    Port number is 55, Interface is fc2/23
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255
    Admin port mode is FL
    Port mode is FL, FCID is 0xea0000
```

The following example displays two port addresses configured with different states

```
switch# show ficon vsan 2 portaddress 2
Port Address 2(0x2) is not installed in vsan 2
    Port number is 2(0x2), Interface is fc1/2
    Port name is
    Port is not admin blocked
    Prohibited port addresses are 0,241-253,255(0,0xf1-0xfd,0xff)
    Admin port mode is auto
    Peer was type model manufactured by

switch# show ficon vsan 2 portaddress 1
Port Address 2(0x2) is not installed in vsan 2
    Port number is 2(0x2), Interface is fc1/2
    Port name is
    Port name is SampleName
    Port is admin blocked
    Prohibited port addresses are 0,241-253,255(0,0xf1-0xfd,0xff)
    Admin port mode is auto
    Peer was type model manufactured by
```

The following example displays control unit information.

```
switch# show ficon control-device sb3
Control Unit Image:0x80b9c2c
VSAN:20 CU:0x20fe00 CUI:0 CUD:0 CURLP:(nil)
ASYNC LP:(nil) MODE:1 STATE:1 CQ LEN:0 MAX:0
PRIMARY LP:   VSAN:0 CH:0x0 CHI:0 CU:0x0 CUI:0
ALTERNATE LP: VSAN:0 CH:0x0 CHI:0 CU:0x0 CUI:0

Logical Path:0x80b9fb4
VSAN:20 CH:0x200600 CHI:15 CU:0x20fe00 CUI:0 STATE:1 FLAGS:0x1
LINK: OH:0x0 OC:0x0 IH:0x0 IC:0x0
DEV:  OH:0x0 OC:0x0 IH:0x0 IC:0x0
SENSE: 00 00 00 00 00 00 00 46
       30 20 00 00 00 00 00 00
       00 00 00 00 00 00 00 00
       00 00 00 00 00 00 00 00
IUI:0x0 DHF:0x0 CCW:0x0 TOKEN:0x0 PCCW:0x0 FCCW:0x0 PTOKEN:0x0 FTOKEN:0x0
CMD:0x0 CCW_FLAGS:0x0 CCW_COUNT:0 CMD_FLAGS:0x0 PRIO:0x0 DATA_COUNT:0
STATUS:0x0 FLAGS:0x0 PARAM:0x0 QTP:0x0 DTP:0x0
CQ LEN:0 MAX:0 DESTATUS:0x0
```

The following example displays the history buffer for the specified VSAN

```
switch# show ficon vsan 20 director-history
Director History Buffer for vsan 20
-------------------------------------------
Key Counter           Ports Address
                      Changed
-------------------------------------------
74556                 43
74557                 44
74558                 45
74559                 46
74560                 47
74561                 48
74562                 49
74563                 50
74564                 51
74565                 52
74566                 53
74567                 54
74568                 55
74569                 56
```

```
74570                   57
74571                   58
74572                   59
74573                   60
74574                   61
74575                   62
74576                   63
74577                   64
74578
74579
74580                   1-3,5,10,12,14-16,34-40,43-45,47-54,56-57,59-64
74581                   3,5
74582                   64
74583
74584                   1-3,10,12,14-16,34-40,43-45,47-54,56-57,59-64
74585                   1
74586                   2
74587                   3
```

The following example displays the running configuration information

```
switch# show running-config
...
ficon vsan 2
portaddress 1
block
name SampleName
prohibit portaddress 3
portaddress 3
prohibit portaddress 1
file IPL
```

The following example displays the availble port numbers:

```
switch# show ficon first-available port-number
Port number 129(0x81) is available
```

show file

To display the contents of a specified file in the file system, use the **show file** command.

show file *filename* [**cksum** | **md5sum**]

Syntax Description

filename	Specifes a filename.
cksum	Displays CRC checksum for a file.
md5sum	Displays MD5 checksum for a file.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the contents of the test file that resides in the slot0 directory.

```
switch# show file slot0:test
config t
Int fc1/1
no shut
end
show int
```

The following example displays the contents of a file residing in the current directory.

```
switch# show file myfile
```

The following example displays the CRC checksum for a file.

```
switch# show file bootflash:vboot-1 cksum
838096258
```

The following example displays the MD5 checksum for a filey.

```
switch# show file bootflash:vboot-1 md5sum
3d8e05790155150734eb8639ce98a331
```

show flogi database

To list all the FLOGI sessions through all interfaces across all VSANs, use the **show flogi database** command.

show flogi database [**fcid** *fcid-id* | **interface** *interface* | **vsan** *vsan-id*]

Syntax Description

fcid *fcid-id*	Displays FLOGI database entries based on the FC ID allocated.
interface *interface*	Displays FLOGI database entries based on the logged in interface.
vsan *vsan-id*	Displays FLOGI database entries based on the VSAN ID. The range is 1 to 4093.

Defaults

Displays the entire FLOGI database.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

Output of this command is first sorted on interface and then on VSANs.

In a Fibre Channel fabric, each host or disk requires an FC ID. Use the **show flogi database** command to verify if a storage device is displayed in the Fabric login (FLOGI) table as in the examples below. If the required device is displayed in the FLOGI table, the fabric login is successful. Examine the FLOGI database on a switch that is directly connected to the host HBA and connected ports.

Examples

The follwing example displays details on the FLOGI database.

```
switch# show flogi database
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
sup-fc0    2     0xb30100  10:00:00:05:30:00:49:63  20:00:00:05:30:00:49:5e
fc9/13     1     0xb200e2  21:00:00:04:cf:27:25:2c  20:00:00:04:cf:27:25:2c
fc9/13     1     0xb200e1  21:00:00:04:cf:4c:18:61  20:00:00:04:cf:4c:18:61
fc9/13     1     0xb200d1  21:00:00:04:cf:4c:18:64  20:00:00:04:cf:4c:18:64
fc9/13     1     0xb200ce  21:00:00:04:cf:4c:16:fb  20:00:00:04:cf:4c:16:fb
fc9/13     1     0xb200cd  21:00:00:04:cf:4c:18:f7  20:00:00:04:cf:4c:18:f7

Total number of flogi = 6.
```

The follwing example displays the FLOGI interface.

```
switch# show flogi database interface fc 1/11
INTERFACE       VSAN    FCID           PORT NAME               NODE NAME
--------------------- ---- -------- ----------------------- ---------------------
fc9/13     1 0xa002ef 21:00:00:20:37:18:17:d2 20:00:00:20:37:18:17:d2
fc9/13     1 0xa002e8 21:00:00:20:37:38:a7:c1 20:00:00:20:37:38:a7:c1
fc9/13     1 0xa002e4 21:00:00:20:37:6b:d7:18 20:00:00:20:37:6b:d7:18
fc9/13     1 0xa002e2 21:00:00:20:37:18:d2:45 20:00:00:20:37:18:d2:45
fc9/13     1 0xa002e1 21:00:00:20:37:39:90:6a 20:00:00:20:37:39:90:6a
fc9/13     1 0xa002e0 21:00:00:20:37:36:0b:4d 20:00:00:20:37:36:0b:4d
fc9/13     1 0xa002dc 21:00:00:20:37:5a:5b:27 20:00:00:20:37:5a:5b:27
fc9/13     1 0xa002da 21:00:00:20:37:18:6f:90 20:00:00:20:37:18:6f:90
fc9/13     1 0xa002d9 21:00:00:20:37:5b:cf:b9 20:00:00:20:37:5b:cf:b9
fc9/13     1 0xa002d6 21:00:00:20:37:46:78:97 20:00:00:20:37:46:78:97

Total number of flogi = 10.
```

The follwing example displays the FLOGI VSAN.

```
switch# show flogi database vsan 1
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
fc9/13       1     0xef02ef  22:00:00:20:37:18:17:d2  20:00:00:20:37:18:17:d2
fc9/13       1     0xef02e8  22:00:00:20:37:38:a7:c1  20:00:00:20:37:38:a7:c1
fc9/13       1     0xef02e4  22:00:00:20:37:6b:d7:18  20:00:00:20:37:6b:d7:18
fc9/13       1     0xef02e2  22:00:00:20:37:18:d2:45  20:00:00:20:37:18:d2:45
fc9/13       1     0xef02e1  22:00:00:20:37:39:90:6a  20:00:00:20:37:39:90:6a
fc9/13       1     0xef02e0  22:00:00:20:37:36:0b:4d  20:00:00:20:37:36:0b:4d
fc9/13       1     0xef02dc  22:00:00:20:37:5a:5b:27  20:00:00:20:37:5a:5b:27
fc9/13       1     0xef02da  22:00:00:20:37:18:6f:90  20:00:00:20:37:18:6f:90
fc9/13       1     0xef02d9  22:00:00:20:37:5b:cf:b9  20:00:00:20:37:5b:cf:b9
fc9/13       1     0xef02d6  22:00:00:20:37:46:78:97  20:00:00:20:37:46:78:97

Total number of flogi = 10.
```

The follwing example displays the FLOGI FCID.

```
switch# show flogi database fcid 0xef02e2
--------------------------------------------------------------------------------
INTERFACE  VSAN    FCID           PORT NAME               NODE NAME
--------------------------------------------------------------------------------
fc9/13       1     0xef02e2  22:00:00:20:37:18:d2:45  20:00:00:20:37:18:d2:45

Total number of flogi = 1.
```

Related Commands

Command	Description
show fcns database	Displays all the local and remote name server entries

show fspf

To display global FSPF information, use the **show fspf** command. This information includes:

- the domain number of the switch
- the autonomous region for the switch
- Min_LS_arrival: the minimum time that must elapse before the switch accepts LSR updates
- Min_LS_interval: the minimum time that must elapse before the switch can transmit an LSR
- LS_refresh_time: the interval lapse between refresh LSR transmissions
- Max_age: the maximum time aa LSR can stay before being deleted

show fspf [**database** [**vsan** *vsan-id* [**domain** *domain-id*] [**detail**]] | **interface** | **vsan** *vsan-id* [**interface** [*interface-range*]]]

Syntax Description

database	To display information of fspf database for a VSAN. If no other parameters are given all the LSRs in the database are displayed. If more specific information is required then the domain number of the owner of the LSR may be given. Detail gives more detailed information on each LSR.
vsan *vsan-id*	Specifies the VSAN ID. The range is 1 to 4093.
domain *domain-id*	The domain of the database. The parameter *domain_num* is unsigned integers in the range 0-255.
detail	Displays detailed FSPF information for the VSAN.
interface *interface-range*	Display FSPF interface information for a given VSAN. If the interface number is specified information on the neighbor on that interface is displayed. If no interface is specified information on all interfaces are displayed. The parameter *interface-range* is of the format **fc***slot*/*port* **- fc***slot*/*port*.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

```
switch# show fspf vsan 1 interface fc 2/14
FSPF interface fc2/14 in VSAN 1
FSPF routing administrative state is active
Interface cost is 500
Timer intervals configured, Hello 20 s, Dead 80 s, Retransmit 5 s
FSPF State is FULL
```

```
Neighbor Domain Id is 0x03(3), Neighbor Interface index is 0x0001060d

Statistics counters :
   Number of packets received :LSU  184  LSA  184  Hello 5477  Error packets 0
   Number of packets transmitted :LSU  184  LSA  184  Hello 5478  Retransmitted
 LSU  0
  Number of times inactivity timer expired for the interface = 0
```

The following example displays FSPF interface information.

```
switch# show fspf interface vsan 1 fc1/1
FSPF interface fc1/1 in VSAN 1
FSPF routing administrative state is active
Interface cost is 500
Timer intervals configured, Hello 20 s, Dead 80 s, Retransmit 5 s
FSPF State is FULL
Neighbor Domain Id is 0x0c(12), Neighbor Interface index is 0x0f100000

Statistics counters :
   Number of packets received : LSU  8  LSA  8  Hello 118  Error packets 0
   Number of packets transmitted : LSU  8  LSA  8  Hello 119  Retransmitted LSU
 0
  Number of times inactivity timer expired for the interface = 0
```

The following example displays FSPF database information.

```
switch# show fspf database vsan 1

FSPF Link State Database for VSAN 1 Domain 0x0c(12)
LSR Type                = 1
Advertising domain ID   = 0x0c(12)
LSR Age                 = 1686
LSR Incarnation number  = 0x80000024
LSR Checksum            = 0x3caf
Number of links         = 2
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
-------------------------------------------------------------------------------
   0x65(101) 0x0000100e     0x00001081               1          500
   0x65(101) 0x0000100f     0x00001080               1          500

FSPF Link State Database for VSAN 1 Domain 0x65(101)
LSR Type                = 1
Advertising domain ID   = 0x65(101)
LSR Age                 = 1685
LSR Incarnation number  = 0x80000028
LSR Checksum            = 0x8443
Number of links         = 6
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
-------------------------------------------------------------------------------
   0xc3(195) 0x00001085     0x00001095               1          500
   0xc3(195) 0x00001086     0x00001096               1          500
   0xc3(195) 0x00001087     0x00001097               1          500
   0xc3(195) 0x00001084     0x00001094               1          500
    0x0c(12) 0x00001081     0x0000100e               1          500
    0x0c(12) 0x00001080     0x0000100f               1          500

FSPF Link State Database for VSAN 1 Domain 0xc3(195)
LSR Type                = 1
Advertising domain ID   = 0xc3(195)
LSR Age                 = 1686
LSR Incarnation number  = 0x80000033
LSR Checksum            = 0x6799
Number of links         = 4
 NbrDomainId      IfIndex   NbrIfIndex    Link Type         Cost
```

```
------------------------------------------------------------------------------
   0x65(101) 0x00001095     0x00001085               1          500
   0x65(101) 0x00001096     0x00001086               1          500
   0x65(101) 0x00001097     0x00001087               1          500
   0x65(101) 0x00001094     0x00001084               1          500
```

This command displays FSPF information for a specified VSAN.

```
switch# show fspf vsan 1
FSPF routing for VSAN 1
FSPF routing administration status is enabled
FSPF routing operational status is UP
It is an intra-domain router
Autonomous region is 0
SPF hold time is 0 msec
MinLsArrival = 1000 msec , MinLsInterval = 5000 msec
Local Domain is 0x65(101)
Number of LSRs = 3, Total Checksum = 0x0001288b

Protocol constants :
   LS_REFRESH_TIME = 1800 sec
   MAX_AGE         = 3600 sec

Statistics counters :
   Number of LSR that reached MaxAge = 0
   Number of SPF computations        = 7
   Number of Checksum Errors         = 0
   Number of Transmitted packets :  LSU 65 LSA 55 Hello 474 Retranmsitted LSU 0
   Number of received packets :  LSU 55 LSA 60 Hello 464 Error packets 10
```

show hardware

To display switch hardware inventory details, use the **show hardware** command.

show hardware [**ipc-channel status**]

Syntax Description

ipc-channel status	Displays the status of the interprocess communication (IPC) channels.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

```
switch# show hardware
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support:http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.

Software
  BIOS:     version 0.0.0
  loader:   version 1.0(0.259)
  kickstart:version 1.0(2) [build 1.0(0.280)]
  system:   version 1.0(2) [build 1.0(0.280)]

  BIOS compile time:      10/10/02
  kickstart image file is:bootflash:/boot-280
  kickstart compile time: 11/20/2002 6:00:00
  system image file is:   isan-280
  system compile time:    11/20/2002 6:00:00

Hardware
  RAM 963108 kB

  bootflash:503808 blocks (block size 512b)
  slot0:         0 blocks (block size 512b)

  172.22.92.28 uptime is 0 days 0 hour 31 minute(s) 23 second(s)

  Last reset
    Reason:Watchdog Timeout/External Reset
    System version:1.0(2)
```

```
This supervisor carries Pentium processor with 963108 kB of memory
Intel(R) Pentium(R) III CPU at 800MHz with 512 KB L2 Cache
Rev:Family  6, Model  11 stepping  1

512K bytes of non-volatile memory.
503808 blocks of internal bootflash (block size 512b)
```

Displays the status of the IPC channel:

```
switch# show hardware ipc-channel status
Active IPC-Channel:            A
```

show hosts

To display configured DNS host configuration details, use the **show hosts** command.

show hosts

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the configures hosts including the default domain, domain list, and name servers.

```
switch# show hosts
Default domain is cisco.com
Domain list: ucsc.edu harvard.edu yale.edu stanford.edu
Name/address lookup uses domain service
Name servers are 15.1.0.1 15.2.0.0
```

show incompatibility system

To display the HA compatibility status between the two supervisor modules, use the **show incompatibility system** command.

show incompatibility system [bootflash: | slot0: | volatile:]*image-filename*

Syntax Description

bootflash:	Source or destination location for internal bootflash memory
slot0:	Source or destination location for the CompactFlash memory or PCMCIA card.
volatile:	Source or destination location for the volatile directory.
image-filename	Specifies the name of the system or kickstart image.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

If the HA compatibility is `strict` on an active supervisor module, the standby supervisor module synchronization may not succeed and may move into an inconsistent state.

If the HA compatibility is `loose`, the synchronization may happen without errors, but some resources may become unusable when a switchover happens.

Examples

The following examples display kernel core settings.

```
switch# show incompatibility system bootflash:old-image-y
The following configurations on active are incompatible with the system image
1) Feature Index : 67 , Capability : CAP_FEATURE_SPAN_FC_TUNNEL_CFG
Description : SPAN - Remote SPAN feature using fc-tunnels
Capability requirement : STRICT
2) Feature Index : 119 , Capability : CAP_FEATURE_FC_TUNNEL_CFG
Description : fc-tunnel is enabled
Capability requirement : STRICT
```

show install all impact

To display the software compatibility matrix of a specific image, use the **show install all impact** command.

show install all impact [**asm-sfn** *image-filename*] [**kickstart** *image-filename*] [**ssi** *image-filename*] [**system** *image-filename*]

Syntax Description

asm-sfn	Specifies the ASM SFN boot variable.
kickstart	Specifies the kickstart boot variable.
ssi	Specifies the SSI boot variable.
system	Specifies the system boot variable.
image-filename	The name of an image.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

Use the **show install all impact** command to view the effect of updating the system from the running image to another specified image.

```
switch# show install all impact

Verifying image bootflash:/ilc1.bin
[####################] 100% -- SUCCESS

Verifying image bootflash:/vk73a
[####################] 100% -- SUCCESS

Verifying image bootflash:/vs73a
[####################] 100% -- SUCCESS

Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS

Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS

Extracting "system" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS

Extracting "kickstart" version from image bootflash:/vk73a.
```

```
[####################] 100% -- SUCCESS

Extracting "loader" version from image bootflash:/vk73a.
[####################] 100% -- SUCCESS

Extracting "slc" version from image bootflash:/vs73a.
[####################] 100% -- SUCCESS

Compatibility check is done:
Module  bootable          Impact  Install-type  Reason
------  --------  --------------  ------------  ------
     2       yes  non-disruptive          none
     4       yes  non-disruptive          none
     6       yes  non-disruptive          none
     9       yes  non-disruptive          none

Images will be upgraded according to following table:
Module       Image       Running-Version           New-Version  Upg-Required
------  ----------  --------------------  --------------------  ------------
     2         slc                1.2(1)                1.2(1)            no
     2        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     4         slc                1.2(1)                1.2(1)            no
     4        ilce                1.2(1)                1.2(1)            no
     4        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     6      system                1.2(1)                1.2(1)            no
     6   kickstart                1.2(1)                1.2(1)            no
     6        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
     6      loader               1.0(3a)               1.0(3a)            no
     9         slc                1.2(1)                1.2(1)            no
     9        bios      v1.0.7(03/20/03)      v1.0.7(03/20/03)            no
```

The following command displays the error message that is displayed if a wrong image is provided.

```
switch# show install all impact system bootflash:
Compatibility check failed. Return code 0x40930003 (Invalid bootvar specified in
 the input).
```

show install all status

To display the on-going **install all** command status or the log of the last installed **install all** command from a Console, SSH, or Telnet session, use the **show install all status** command.

show install all status

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

This command only displays the status of an **install all** command that is issued form the CLI (not the Fabric Manager).

Examples

Use the **show install all status** command to view the output of a **install all** command process.

```
switch# show install all status
There is an on-going installation... <---------------------- in progress installation
Enter Ctrl-C to go back to the prompt.


Verifying image bootflash:/b-1.3.0.104
 -- SUCCESS


Verifying image bootflash:/i-1.3.0.104
 -- SUCCESS


Extracting "system" version from image bootflash:/i-1.3.0.104.
 -- SUCCESS


Extracting "kickstart" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS


Extracting "loader" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS


switch# show install all status
This is the log of last installation.          <<<<<< log of last install
```

```
Verifying image bootflash:/b-1.3.0.104
 -- SUCCESS


Verifying image bootflash:/i-1.3.0.104
 -- SUCCESS


Extracting "system" version from image bootflash:/i-1.3.0.104.
 -- SUCCESS


Extracting "kickstart" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS


Extracting "loader" version from image bootflash:/b-1.3.0.104.
 -- SUCCESS
```

show in-order-guarantee

To display the present configured state of the in-order delivery feature, use the **show in-order-guarantee** command .

show in-order-guarantee

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

None.

Examples

The following example displays the present configuration status of the in-order delivery feature.

```
switch# show in-order-guarantee
global inorder delivery configuration:guaranteed

VSAN specific settings
vsan 1 inorder delivery:guaranteed
vsan 101 inorder delivery:not guaranteed
vsan 1000 inorder delivery:guaranteed
vsan 1001 inorder delivery:guaranteed
vsan 1682 inorder delivery:guaranteed
vsan 2001 inorder delivery:guaranteed
vsan 2009 inorder delivery:guaranteed
vsan 2456 inorder delivery:guaranteed
vsan 3277 inorder delivery:guaranteed
vsan 3451 inorder delivery:guaranteed
vsan 3452 inorder delivery:guaranteed
vsan 3453 inorder delivery:guaranteed
```

show interface

You can check the status of an interface at any time by using the **show interface** command.

show interface [*interface range*]
[**bbcredit**] |
[**brief** | **counters** | **description**]
[**cpp** *slot*/*process-number*/*vsan-id*] | [**fv** *slot*/*dpp-number*/*fv-port*]
[**fc** *slot*/*port*] | [**fc-tunnel** *tunnel-id*] |
[**fcip** *interface-number* | **gigabitethernet** | **iscsi**] |
mgmt | **port-channel** *portchannel-number. subinterface-number* | **sup-fc** |
transceiver (calibrations | **details)** | **trunk vsan** [*vsan-id*] | **vsan** *vsan-id*

Syntax Description

interface range	Displays the interfaces in the specified range.
bbcredit	Displays BB_credit information for all interfaces.
brief	Displays brief info of interface.
counters	Displays the interface counter information.
description	Displays a description of interface.
cpp	Displays the virtualization interface specific to the ASM module.
fc *slot*/*port*	Displays the Fibre Channel interface in the specified slot and port.
fc-tunnel *tunnel-id*	Displays description of the specified FC tunnel from 1 to 4095.
fcip *interface-number*	Displays the description of the specified FCIP interface from 1 to 255.
fv *slot*/*dpp-number*/*fv-port*	Displays the virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number.
gigabitethernet *slot*/*port*	Displays the description of the Gigabit Ethernet interface in the specified slot/ port.
iscsi *slot*/*port*	Displays the description of the iSCSI interface in the specified slot or port.
mgmt	Displays the description of the management interface.
port-channel *portchannel-number. subinterface-number*	Displays the PortChannel interface specified by the PortChannel number followed by a dot (.) indicator and the subinterface number.
sup-fc	Displays the inband interface details.
svc	Displays the virtualization interface specific to the CSM module.
transceiver	Displays the transceiver information for interface.
calibrations	Displays transceiver calibration information for the specified interface.
details	Show detailed transceiver diagnostics information for the specified interface.
trunk vsan	Displays the trunking status of all VSANs.
vsan-id	Displays the trunking status of the specified VSANs.
vsan *vsan-id*	Displays the VSAN interface (brief, counters, or description for a specified interface or a range of interfaces).

Defaults

None.

Command Modes

EXEC

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

You can specify a range of interfaces by issuing a command with the following example format:

interface fc1/1 - 5 , fc2/5 - 7

The spaces are required before and after the dash (-) and before and after the comma (,).

The **show interface** *interface-type slot/port* **transceiver** command can only be issued on a switch in the Cisco MDS 9100 Series if the FCOT is present.

Examples

The following example displays information for a Fibre Channel interface.

```
switch# show interface fc1/11
fc1/11 is up
    Hardware is Fibre Channel
    Port WWN is 20:0b:00:05:30:00:59:de
    Admin port mode is ST
    Port mode is ST
    Port vsan is 1
    Speed is 1 Gbps
    Rspan tunnel is fc-tunnel 100
    Beacon is turned off
    5 minutes input rate 248 bits/sec, 31 bytes/sec, 0 frames/sec
    5 minutes output rate 176 bits/sec, 22 bytes/sec, 0 frames/sec
      6862 frames input, 444232 bytes
        0 discards, 0 errors
        0 CRC, 0 unknown class
        0 too long, 0 too short
      6862 frames output, 307072 bytes
        0 discards, 0 errors
      0 input OLS, 0 LRR, 0 NOS, 0 loop inits
      0 output OLS, 0 LRR, 0 NOS, 0 loop inits
     16 receive B2B credit remaining
      3 transmit B2B credit remaining.
```

The following example displays information for a supervisor Fibre Channel interface.

```
switch# show int sup-fc0
sup-fc0 is up
    Hardware is FastEthernet, address is 0000.0000.0000
    MTU 2596 bytes, BW 1000000 Kbit
    66 packets input, 7316 bytes
    Received 0 multicast frames, 0 compressed
    0 input errors, 0 frame, 0 overrun 0 fifo
    64 packets output, 28068 bytes, 0 underruns
    0 output errors, 0 collisions, 0 fifo
    0 carrier errors
```

The following example displays information for a VSAN interface.

```
switch# show int vsan 2
vsan2 is up, line protocol is up
    WWPN is 10:00:00:05:30:00:59:1f, FCID is 0xb90100
    Internet address is 10.1.1.1/24
    MTU 1500 bytes, BW 1000000 Kbit
    0 packets input, 0 bytes, 0 errors, 0 multicast
    0 packets output, 0 bytes, 0 errors, 0 dropped
```

The following example displays description information for all interfaces on the switch.

```
switch# show interface description
fc1/1
    no description
fc1/2
    no description
fc1/15
fcAnl

sup-fc0 is up

mgmt0 is up

vsan1 - IPFC interface

port-channel 15
no description

port-channel 98
no description
```

The following example displays brief information for a range of Fibre Channel interfaces.

```
switch# show interface fc2/1 - 5 brief
-------------------------------------------------------------------------------
Interface  Vsan   Admin  Admin   Status           Oper  Oper   Port-channel
                  Mode   Trunk                    Mode  Speed
                         Mode                           (Gbps)
-------------------------------------------------------------------------------
fc1/1      1      auto   on      down             --    --     --
fc1/2      1      auto   on      fcotAbsent       --    --     --
fc1/3      1      F      --      notConnected     --    --     --
fc1/4      1      auto   on      fcotAbsent       --    --     --
fc1/5      1      F      --      up               F     2      --
fc1/6      1      auto   on      fcotAbsent       --    --     --
fc1/7      1      auto   on      down             --    --     --
fc1/8      1      auto   on      fcotAbsent       --    --     --
fc1/9      1      auto   on      fcotAbsent       --    --     --
fc1/10     1      auto   on      fcotAbsent       --    --     --
fc1/11     1      auto   on      down             --    --     --
fc1/12     1      auto   on      fcotAbsent       --    --     --
fc1/13     1      auto   on      down             --    --     --
fc1/14     1      auto   on      fcotAbsent       --    --     --
fc1/15     1      auto   on      down             --    --     --
fc1/16     1      auto   on      fcotAbsent       --    --     --
-------------------------------------------------------------------------------
Interface          Status   IP Address               Speed        MTU
-------------------------------------------------------------------------------
sup-fc0            up       --                       1 Gbps       2596
-------------------------------------------------------------------------------
Interface          Status   IP Address               Speed        MTU
-------------------------------------------------------------------------------
mgmt0              up       173.95.112/24         100 Mbps     1500
-------------------------------------------------------------------------------
```

```
Interface          Status    IP Address               Speed        MTU
--------------------------------------------------------------------------------
vsan1                 up     10.1.1.1/24              1 Gbps       1500
```

The following example displays counter information for a FC IP interface.

```
switch# show interface fcip 3 counters
fcip3
    TCP Connection Information
      2 Active TCP connections
        Control connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65532
        Data connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65534
      30 Attempts for active connections, 0 close of connections
    TCP Parameters
      Path MTU 1500 bytes
      Current retransmission timeout is 300 ms
      Round trip time: Smoothed 10 ms, Variance: 5
      Advertised window: Current: 122 KB, Maximum: 122 KB, Scale: 1
      Peer receive window: Current: 114 KB, Maximum: 114 KB, Scale: 1
      Congestion window: Current: 2 KB, Slow start threshold: 1048560 KB
    5 minutes input rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
    5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
      910 frames input, 84652 bytes
         910 Class F frames input, 84652 bytes
         0 Class 2/3 frames input, 0 bytes
         0 Error frames timestamp error 0
      908 frames output, 84096 bytes
         908 Class F frames output, 84096 bytes
         0 Class 2/3 frames output, 0 bytes
         0 Error frames 0 reass frames
```

The following example displays brief counter information for all interfaces on the switch.

```
switch# show interface counters brief
```

```
--------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ------------------------------ ------------------------------
                   Rate     Total                 Rate     Total
                   MB/s     Frames                MB/s     Frames
--------------------------------------------------------------------------------
fc9/1              0        0                     0        0
fc9/2              0        0                     0        0
fc9/3              0        0                     0        0
fc9/4              0        0                     0        0
...
--------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ------------------------------ ------------------------------
                   Rate     Total                 Rate     Total
                   MB/s     Frames                MB/s     Frames
--------------------------------------------------------------------------------
iscsi4/1           0        0                     0        0
iscsi4/2           0        0                     0        0
iscsi4/3           0        0                     0        0
iscsi4/4           0        0                     0        0
...
vsan10 is up, line protocol is up
    WWPN is 10:00:00:05:30:00:07:23, FCID is 0xee0001
    Internet address is 10.1.1.5/24
    MTU 1500 bytes, BW 1000000 Kbit
    0 packets input, 0 bytes, 0 errors, 0 multicast
    0 packets output, 0 bytes, 0 errors, 0 dropped
```

```
--------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ------------------------------ ------------------------------
                   Rate     Total                 Rate     Total
                   MB/s     Frames                MB/s     Frames
--------------------------------------------------------------------------------

port-channel 100   0        0                     0        0

--------------------------------------------------------------------------------
Interface          Input (rate is 5 min avg)      Output (rate is 5 min avg)
                   ------------------------------ ------------------------------
                   Rate     Total                 Rate     Total
                   Mbits/s  Frames                Mbits/s  Frames
--------------------------------------------------------------------------------

fcip2              0        0                     0        0
fcip3              9        0                     9        0

fcip6              8        0                     8        0
fcip7              8        0                     8        0
```

The following example displays information for an FC IP interface.

```
switch# show interface fcip 3
fcip3 is trunking
    Hardware is GigabitEthernet
    Port WWN is 20:ca:00:05:30:00:07:1e
    Peer port WWN is 20:ca:00:00:53:00:18:1e
    Admin port mode is auto, trunk mode is on
    Port mode is TE
    vsan is 1
    Trunk vsans (allowed active) (1,10)
    Trunk vsans (operational)    (1)
    Trunk vsans (up)             (1)
    Trunk vsans (isolated)       (10)
    Trunk vsans (initializing)   ()
    Using Profile id 3 (interface GigabitEthernet4/3)
    Peer Information
      Peer Internet address is 43.1.1.1 and port is 3225
      Special Frame is disabled
    Maximum number of TCP connections is 2
    Time Stamp is disabled
    B-port mode disabled
    TCP Connection Information
      2 Active TCP connections
        Control connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65532
        Data connection: Local 43.1.1.2:3225, Remote 43.1.1.1:65534
      30 Attempts for active connections, 0 close of connections
    TCP Parameters
      Path MTU 1500 bytes
      Current retransmission timeout is 300 ms
      Round trip time: Smoothed 10 ms, Variance: 5
      Advertised window: Current: 122 KB, Maximum: 122 KB, Scale: 1
      Peer receive window: Current: 114 KB, Maximum: 114 KB, Scale: 1
      Congestion window: Current: 2 KB, Slow start threshold: 1048560 KB
    5 minutes input rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
    5 minutes output rate 64 bits/sec, 8 bytes/sec, 0 frames/sec
      866 frames input, 80604 bytes
         866 Class F frames input, 80604 bytes
         0 Class 2/3 frames input, 0 bytes
         0 Error frames timestamp error 0
      864 frames output, 80048 bytes
         864 Class F frames output, 80048 bytes
```

```
        0 Class 2/3 frames output, 0 bytes
        0 Error frames 0 reass frames
      16 receive B2B credit remaining
       3 transmit B2B credit remaining.
```

The following example displays information for a Gigabit Ethernet interface.

```
switch# show interface gigabitethernet 4/1
GigabitEthernet4/1 is up
    Hardware is GigabitEthernet, address is 0005.3000.2e12
    Internet address is 100.1.1.2/24
    MTU 1500 bytes, BW 1000000 Kbit
    Port mode is IPS
    Speed is 1 Gbps
    Beacon is turned off
    5 minutes input rate 32 bits/sec, 4 bytes/sec, 0 frames/sec
    5 minutes output rate 88 bits/sec, 11 bytes/sec, 0 frames/sec
    637 packets input, 49950 bytes
      0 multicast frames, 0 compressed
      0 input errors, 0 frame, 0 overrun 0 fifo
    659 packets output, 101474 bytes, 0 underruns
      0 output errors, 0 collisions, 0 fifo
      0 carrier errors
```

The following example displays information for an iSCSI interface.

```
switch# show interface iscsi 2/1
iscsi2/1 is up
    Hardware is GigabitEthernet
    Port WWN is 20:41:00:05:30:00:50:de
    Admin port mode is ISCSI
    Port mode is ISCSI
    Speed is 1 Gbps
    iSCSI initiator is identified by name
    Number of iSCSI session: 7, Number of TCP connection: 7
    Configured TCP parameters
        Local Port is 3260
        PMTU discover is disabled
        Keepalive-timeout is 1 sec
        Minimum-retransmit-time is 300 ms
        Max-retransmissions 8
        Sack is disabled
        Minimum available bandwidth is 0 kbps
        Estimated round trip time is 0 usec
    5 minutes input rate 265184 bits/sec, 33148 bytes/sec, 690 frames/sec
    5 minutes output rate 375002168 bits/sec, 46875271 bytes/sec, 33833 frames/sec
    iSCSI statistics
      6202235 packets input, 299732864 bytes
        Command 6189718 pdus, Data-out 1937 pdus, 1983488 bytes, 0 fragments
      146738794 packets output, 196613551108 bytes
        Response 6184282 pdus (with sense 4), R2T 547 pdus
        Data-in 140543388 pdus, 189570075420 bytes
```

The following example displays information for the tranceiver on a Fibre Channel interface.

```
switch# show interface fc2/5 transceiver
fc2/5 fcot is present
    name is CISCO-INFINEON
    part number is V23848-M305-C56C
    revision is A3
    serial number is 30000474
    fc-transmitter type is short wave laser
    cisco extended id is unknown (0x0)

    SFP Diagnostics Information
```

```
        Temperature      :  34.98 Celsius
        Voltage          :   3.31 Volt
        Current          :   7.24 mA
        Optical Tx Power :  -5.99 dBm
        Optical Rx Power : -23.01 dBm
    Note: ++  high-alarm; +  high-warning; --  low-alarm; -  low-warning

switch# show interface fc2/5 transceiver details
fc2/5 fcot is present
    name is CISCO-INFINEON
    part number is V23848-M305-C56C
    revision is A3
    serial number is 30000474
    fc-transmitter type is short wave laser
    cisco extended id is unknown (0x0)

    SFP Detail Diagnostics Information
  --------------------------------------------------------------------------
                                    Alarms                  Warnings
                                 High        Low         High          Low
  --------------------------------------------------------------------------
  Temperature  34.98 C        105.00 C    211.00 C    100.00 C      216.00 C
  Voltage       3.31 V          3.71 V      2.80 V      3.64 V        2.97 V
  Current       7.24 mA        19.97 mA     3.07 mA    14.85 mA       4.61 mA
  Tx Power     -5.99 dBm       -3.00 dBm  -10.51 dBm   -4.00 dBm     -9.51 dbm
  Rx Power    -23.01 dBm        1.00 dBm  -23.98 dBm    0.00 dBm    -18.86 dBm
  --------------------------------------------------------------------------
  Note: ++  high-alarm; +  high-warning; --  low-alarm; -  low-warning
```

The following example displays calibration information for the tranceiver on a Fibre Channel interface.

```
switch# show interface fc2/5 transceiver calibrations
fc2/5 fcot is present
    name is CISCO-INFINEON
    part number is V23848-M305-C56C
    revision is A3
    serial number is 30000474
    fc-transmitter type is short wave laser
    cisco extended id is unknown (0x0)

SFP is internally calibrated
```

The following example displays information for a Fibre Channel tunnel interface.

```
switch# show interface fc-tunnel 200
fc-tunnel 200 is up
Dest   IP Addr: 200.200.200.7   Tunnel ID: 200
Source IP Addr: 200.200.200.4   LSP ID: 1
Explicit Path Name:
```

show ip access-list

To display the IP access control lists (IP-ACLs) currently active, use the **show ip access-list** command.

show ip access-list [*list-number* | **usage**]

Syntax Description

ip access-list	Displays the information for all IP-ACLs.
list-number	Identifies the IP-ACL with an integer ranging from 1 to 256.
usage	Specifies the interface type.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

The following example displays configured IP-ACLs.

```
switch# show ip access-list usage
Access List Name/Number          Filters IF   Status    Creation Time
-------------------------------- ------- ---- --------- -------------
abc                              3       7    active    Tue Jun 24 17:51:40 2003
x1                               3       1    active    Tue Jun 24 18:32:25 2003
x3                             0       1    not-ready Tue Jun 24 18:32:28 2003
```

The following example displays a summary of the specified IP-ACL

```
switch# show ip access-list abc
ip access-list abc permit tcp any any (0 matches)
ip access-list abc permit udp any any (0 matches)
ip access-list abc permit icmp any any (0 matches)
ip access-list abc permit ip 10.1.1.0 0.0.0.255 (2 matches)
ip access-list abc permit ip 10.3.70.0 0.0.0.255 (7 matches)
```

show ip route

To display the ip routes currently active, use the **show ip route** command.

show ip route [**configured**]

Syntax Description

configured	Displays configured IP routes.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays active IP routes.

```
switch# show ip route

Codes: C - connected, S - static

Default gateway is 172.22.95.1

C 10.0.0.0/24 is directly connected, vsan1
C 172.22.95.0/24 is directly connected, mgmt0
```

The following example displays configured IP routes.

```
switch# show ip route configured
          default      172.22.31.1          0.0.0.0      0            mgmt0
      10.10.11.0       10.10.11.1    255.255.255.0      0 GigabitEthernet1/1
      10.10.50.0       10.10.50.1    255.255.255.0      0 GigabitEthernet1/2.1
      10.10.51.0       10.10.51.1    255.255.255.0      0 GigabitEthernet1/2.2
      10.10.60.0       10.10.60.1    255.255.255.0      0 GigabitEthernet1/2
     172.22.31.0    172.22.31.110    255.255.255.0      0            mgmt0
```

show ip routing

To display the IP routing state, use the **show ip routing** command.

show ip routing

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example the IP routing state.

```
switch# show ip routing
ip routing is disabled
```

show ips arp

To display the IP storage ARP cache informaiton , use the **show ips arp** command.

show ips arp interface gigabitethernet *slot/port*

Syntax Description		
	interface gigabitethernet *slot/port*	Specifies a Gigabit Ethernet interface by the slot and port.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

Use the **show ips arp interface gigabitethernet** command to display the ARP cache on the Gigabit Ethernet interfaces. This command takes the main Ethernet interface and as a parameter and returns the ARP cache for that interface.

Examples

The following example displays ARP caches in the specified interface.

```
switch# show ips arp interface gigabitethernet 4/1
Protocol         Address   Age (min)   Hardware Addr  Type   Interface
Protocol         Address   Age (min)   Hardware Addr  Type   Interface
Internet     172.22.91.1    2    -  00:00:0c:07:ac:01  ARPA  GigabitEthernet4/4
Internet     172.22.91.2    0    -  00:02:7e:6b:a8:08  ARPA  GigabitEthernet4/4
Internet    172.22.91.17    0    -  00:e0:81:20:45:f5  ARPA  GigabitEthernet4/4
Internet    172.22.91.18    0    -  00:e0:81:05:f7:64  ARPA  GigabitEthernet4/4
Internet    172.22.91.30    0    -  00:e0:18:2e:9d:19  ARPA  GigabitEthernet4/4
...
```

show ips ip route

To show the IP storage route table information, use the **show ips ip route** command.

show ips ip route interface gigabitethernet *slot/port*

Syntax Description

interface gigabitethernet *slot/port*	Specifies a Gigabit Ethernet interface by the slot and port.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following example displays the IP route table information for a Gigabit Ethernet interface.

```
switch# show ips ip route interface gigabitethernet 8/1
Codes: C - connected, S - static

No default gateway

C 10.1.3.0/24 is directly connected, GigabitEthernet8/1
```

show ips stats

To display IP storage statistics, use the **show ips stats** command.

show ips stats {**buffer** | **dma-bridge** | **icmp** | **ip** | **mac**} **interface gigabitethernet** *slot*/*port*

show ips stats {**hw-comp** | **tcp**} {**all** | **interface gigabitethernet** *slot*/*port*}

Syntax Description

buffer	Displays IP storage buffer information.
dma-bridge	Displays the direct memory access (DMA) statistics.
icmp	Displays ICMP statistics.
ip	Displays IP statistics.
mac	Displays MAC statistics.
hw-comp	Displays hardware compression statistics.
tcp	Displays TCP statistics
all	Displays statistical information for all interfaces.
interface gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface by the slot and port.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

Use the **show ips stats icmp interface gigabitethernet** command to obtain ICMP statistics for the selected interface.

Use the **show ips stats ip interface gigabitethernet 2/1** command to obtain IP statistics for the selected interface.

Use the **show ips stats mac interface gigabitethernet** command to obtain Ethernet statistics for the selected interface.

Use the **show ips stats tcp interface gigabitethernet** command to obtain TCP stats along with the connection list and TCP state or the selected interface.

Examples

The following example displays iSCSI buffer statistics.

```
switch# show ips stats buffer interface gigabitethernet 1/2
Buffer Statistics for port GigabitEthernet1/2
    Mbuf stats
      164248 total mbufs, 82119 free mbufs, 0 mbuf alloc failures
      123186 mbuf high watermark, 20531 mbuf low watermark
      0 free shared mbufs, 0 shared mbuf alloc failures
      82124 total clusters, 77005 free clusters, 0 cluster alloc failures
      86230 mbuf high watermark, 78017 mbuf low watermark
      0 free shared clusters, 0 shared cluster alloc failures
    Ether channel stats
      0 tcp segments sent, 0 tcp segments received
      0 xmit packets sent, 0 xmit packets received
      0 config packets sent, 0 config packets received
      0 MPQ packet send errors
```

The following example displays ICMP statistics.

```
switch# show ips stats icmp interface gigabitethernet 8/1
ICMP Statistics for port GigabitEthernet8/1
    2 ICMP messages received
    0 ICMP messages dropped due to errors
    ICMP input histogram
      2 echo request
    ICMP output histogram
      2 echo reply
```

The following example displays IP statistics.

```
switch# show ips stats ip interface gigabitethernet 8/1
Internet Protocol Statistics for port GigabitEthernet8/1
    22511807 total received, 22509468 good, 2459 error
    0 reassembly required, 0 reassembled ok, 0 dropped after timeout
    27935633 packets sent, 0 outgoing dropped, 0 dropped no route
    0 fragments created, 0 cannot fragment
```

The following example displays MAC statistics.

```
switch# show ips stats mac interface gigabitethernet 8/1
Ethernet MAC statistics for port GigabitEthernet8/1
    Hardware Transmit Counters
      28335543 frame 37251751286 bytes
      0 collisions, 0 late collisions, 0 excess collisions
      0 bad frames, 0 FCS error, 0 abort, 0 runt, 0 oversize
    Hardware Receive Counters
      18992406778 bytes, 22835370 frames, 0 multicasts, 2584 broadcasts
      0 bad, 0 runt, 0 CRC error, 0 length error
      0 code error, 0 align error, 0 oversize error
    Software Counters
      22835370 received frames, 28335543 transmit frames
      0 frames soft queued, 0 current queue, 0 max queue
      0 dropped, 0 low memory
```

The following example displays TCP statistics.

```
switch# show ips stats tcp interface gigabitethernet 8/1
TCP Statistics for port GigabitEthernet8/1
    Connection Stats
      0 active openings, 0 accepts
      0 failed attempts, 0 reset received, 0 established
    Segment stats
      23657893 received, 29361174 sent, 0 retransmitted
      0 bad segments received, 0 reset sent

    TCP Active Connections
      Local  Address         Remote Address        State      Send-Q   Recv-Q
      10.1.3.3:3260          10.1.3.106:51935      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51936      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51937      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51938      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51939      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51940      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51941      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51942      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51943      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.106:51944      ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1026       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1027       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1028       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1029       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1030       ESTABLISH  48       0
      10.1.3.3:3260          10.1.3.115:1031       ESTABLISH  48       0
      10.1.3.3:3260          10.1.3.115:1032       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1033       ESTABLISH  0        0
      10.1.3.3:3260          10.1.3.115:1034       ESTABLISH  0        0
      0.0.0.0:3260           0.0.0.0:0             LISTEN     0        0
```

show ips status

To display the IP storage status, use the **show ips status** command.

show ips status [**module** *slot*]

Syntax Description

module *slot*	Identifies the module in the specified slot.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following example displays the IP storage status for all modules on the switch.

```
switch# show ips status
        Port 8/1 READY
        Port 8/2 READY
        Port 8/3 READY
        Port 8/4 READY
        Port 8/5 READY
        Port 8/6 READY
        Port 8/7 READY
        Port 8/8 READY
```

The following example displays the IP storage status for the module in slot 9.

```
switch# show ips status module 9
        Port 9/1 READY
        Port 9/2 READY
        Port 9/3 READY
        Port 9/4 READY
        Port 9/5 READY
        Port 9/6 READY
        Port 9/7 READY
        Port 9/8 READY
...
```

show iscsi global

To display global iSCSI configured information, use the **show iscsi global** command.

show iscsi global

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following example displays all configured iSCSI initiators.

```
switch# show iscsi global
iSCSI Global information
  Authentication:CHAP, NONE
  Import FC Target:Enabled
  Number of target nodes:11
  Number of portals:8
  Number of sessions:10
  Failed sessions:9, Last failed initiator
name:iqn.1987-05.com.cisco:02.0163c91bbc28.host1
```

show iscsi initiator

To display information about all the iSCSI nodes that are remote to the switch, use the **show iscsi initiator** command.

show iscsi initiator [**configured** [*initiator-name*] | **detail** | **fcp-session** [**detail**] | **iscsi-session** [**detail**] | **summary** [**name**]]

Syntax Description

configured	Displays the configured information for the iSCSI initiator.
initiator-name	Specifies the name of an initiator.
detail	Displays detailed iSCSI initiator information.
fcp-session	Displays the Fibre Channel session details.
iscsi-session	Displays iSCSI session details.
summary	Displays summary information.
name	Displays initiator name information.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

If no parameter is provided the command lists all the active iSCSI initiators. If the iSCSI node name is provided then the command lists the details of that iSCSI initiator.

Examples

The following example displays all iSCSI initiators.

```
switch# show iscsi initiator
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
    iSCSI alias name: iscsi7-lnx
    Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:12:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 1, FCID 0xdc0100

iSCSI Node name is iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
    iSCSI alias name: ISCSI16-W2K
    Node WWN is 23:1f:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:28:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 1, FCID 0xdc0101
```

```
iSCSI Node name is iqn.1987-05.com.cisco.01.b6ca466f8b4d8e848ab17e92f24bf9cc
    iSCSI alias name: iscsi6-lnx
    Node WWN is 23:29:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1, 2, 3, 4
    Number of Virtual n_ports: 1
    Virtual Port WWN is 23:2a:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag: 0x382
        VSAN ID 4, FCID 0xee0000
        VSAN ID 3, FCID 0xee0100
        VSAN ID 2, FCID 0xee0000
        VSAN ID 1, FCID 0xdc0102
...
```

The following example displays detailed Information for all iSCSI initiators.

```
switch# show iscsi initiator detail
iSCSI Node name is iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
    iSCSI alias name: iscsi7-lnx
    Node WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
    Member of vsans: 1
    Number of Virtual n_ports: 1

    Virtual Port WWN is 23:10:00:05:30:00:7e:a0 (dynamic)
      Interface iSCSI 8/3, Portal group tag is 0x382
        VSAN ID 1, FCID 0xdc0100
        No. of FC sessions: 3
        No. of iSCSI sessions: 2

        iSCSI session details

          Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
          Statistics:
            PDU: Command: 0, Response: 0
            Bytes: TX: 0, RX: 0
            Number of connection: 1
          TCP parameters
            Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
            Path MTU 1500 bytes
            Current retransmission timeout is 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
            Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
            Congestion window: Current: 8 KB

          Target node: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
          Statistics:
            PDU: Command: 0, Response: 0
            Bytes: TX: 0, RX: 0
            Number of connection: 1
          TCP parameters
            Connection Local 10.1.3.3:3260, Remote 10.1.3.107:34112
            Path MTU 1500 bytes
            Current retransmission timeout is 300 ms
            Round trip time: Smoothed 2 ms, Variance: 1
            Advertised window: Current: 6 KB, Maximum: 6 KB, Scale: 3
            Peer receive window: Current: 250 KB, Maximum: 250 KB, Scale: 2
            Congestion window: Current: 8 KB
...
```

show iscsi session

To display iSCSI session information, use the **show iscsi session** command.

show iscsi session [**incoming**] [**initiator** *name*] [**outgoing**] [**target** *name*] [**detail**]

Syntax Description

detail	Displays detailed iSCSI session information.
incoming	Displays incoming iSCSI sessions.
initiator *name*	Displays specific iSCSI initiator session information. Maximum length is 80 characters.
outgoing	Displays outgoing iSCSI sessions
target *name*	Displays specific iSCSI target session information. Maximum length is 80 characters.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

All the parameters are optional in the **show iscsi session** commands. If no parameter is provided the command lists all the active iSCSI initiator or target sessions. If the IP address or iSCSI node name is provided, then the command lists details of all sessions from that initiator or to that target.

Examples

The following command displays the iSCSI session information.

```
switch# show iscsi session
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    VSAN 1, ISID 000000000000, Status active, no reservation

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation

Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation
...
```

The following command displays the specified iSCSI target.

```
switch# show iscsi session target
iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
Initiator iqn.1987-05.com.cisco.01.15cee6e7925087abc82ed96377653c8
  Session #1
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738e77d
    VSAN 1, ISID 000000000000, Status active, no reservation
```

Note On the IPS module, you can verify what iSCSI initiator IQN has been assigned which pWWN when it logs in by using the **show zone active vsan** *vsan-id* command.

```
switch# zone name iscsi_16_A vsan 16
* fcid 0x7700d4 [pwwn 21:00:00:20:37:c5:2d:6d]
* fcid 0x7700d5 [pwwn 21:00:00:20:37:c5:2e:2e]
* fcid 0x770100 [symbolic-nodename
iqn.1987-05.com.cisco.02.BC3FEEFC431B199F81F33E97E2809C14.NUYEAR]
```

The following command displays the specified iSCSI initiator.

```
switch# show iscsi session initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
Initiator iqn.1987-05.com.cisco:02.91b0ee2e8aa1.iscsi16-w2k
  Session #1
    Discovery session, ISID 00023d00022f, Status active

  Session #2
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388bc2
    VSAN 1, ISID 00023d000230, Status active, no reservation

  Session #3
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ad7f
    VSAN 1, ISID 00023d000235, Status active, no reservation

  Session #4
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa3a
    VSAN 1, ISID 00023d000236, Status active, no reservation

  Session #5
    Target iqn.com.domainname.172.22.93.143.08-03.gw.210000203739ada7
    VSAN 1, ISID 00023d000237, Status active, no reservation

  Session #6
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037381ccb
    VSAN 1, ISID 00023d000370, Status active, no reservation

  Session #7
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037388b54
    VSAN 1, ISID 00023d000371, Status active, no reservation

  Session #8
    Target iqn.com.domainname.172.22.93.143.08-03.gw.220000203738a194
    VSAN 1, ISID 00023d000372, Status active, no reservation

  Session #9
    Target iqn.com.domainname.172.22.93.143.08-03.gw.2200002037360053
    VSAN 1, ISID 00023d000373, Status active, no reservation
```

show iscsi stats

To display the iSCSI statistics information, use the **show iscsi stats** command.

show iscsi stats [**iscsi** *slot*/*port*] [**clear** | **detail**]

Syntax Description

iscsi *slot*/*port*	Displays statistics for the specified iSCSI interface.
clear	Clears iSCSI statistics for the session or interface.
detail	Displays detailed iSCSI statistics for the session or interface.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following command displays brief iSCSI statistics.

```
switch# show iscsi stats
iscsi8/1
    5 minutes input rate 23334800 bits/sec, 2916850 bytes/sec, 2841 frames/sec
    5 minutes output rate 45318424 bits/sec, 5664803 bytes/sec, 4170 frames/sec
    iSCSI statistics
      86382665 packets input, 2689441036 bytes
        3916933 Command pdus, 82463404 Data-out pdus, 2837976576 Data-out bytes,
 0 fragments
      131109319 packets output, 2091677936 bytes
        3916876 Response pdus (with sense 0), 1289224 R2T pdus
        125900891 Data-in pdus, 93381152 Data-in bytes

iscsi8/2
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/3
    5 minutes input rate 272 bits/sec, 34 bytes/sec, 0 frames/sec
    5 minutes output rate 40 bits/sec, 5 bytes/sec, 0 frames/sec
    iSCSI statistics
      30 packets input, 10228 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      30 packets output, 1744 bytes
```

```
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/4
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/5
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/6
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/7
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes

iscsi8/8
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
```

The following command displays detailed iSCSI statistics.

```
switch# show iscsi stats detail
iscsi8/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
```

```
        0 Data-in pdus, 0 Data-in bytes
    iSCSI Forward:
      Command: 0 PDUs (Received: 0)
      Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
    FCP Forward:
      Xfer_rdy: 0 (Received: 0)
      Data-In: 0 (Received: 0), 0 bytes
      Response: 0 (Received: 0), with sense 0
      TMF Resp: 0

    iSCSI Stats:
      Login: attempt: 0, succeed: 0, fail: 0, authen fail: 0
      Rcvd: NOP-Out: 0, Sent: NOP-In: 0
            NOP-In: 0, Sent: NOP-Out: 0
            TMF-REQ: 0, Sent: TMF-RESP: 0
            Text-REQ: 0, Sent: Text-RESP: 0
            SNACK: 0
            Unrecognized Opcode: 0, Bad header digest: 0
            Command in window but not next: 0, exceed wait queue limit: 0
            Received PDU in wrong phase: 0
    FCP Stats:
      Total: Sent: 0
             Received: 0 (Error: 0, Unknown: 0)
      Sent: PLOGI: 0, Rcvd: PLOGI_ACC: 0, PLOGI_RJT: 0
            PRLI: 0, Rcvd: PRLI_ACC: 0, PRLI_RJT: 0, Error resp: 0
            LOGO: 0, Rcvd: LOGO_ACC: 0, LOGO_RJT: 0
            ABTS: 0, Rcvd: ABTS_ACC: 0
            TMF REQ: 0
            Self orig command: 0, Rcvd: data: 0, resp: 0
      Rcvd: PLOGI: 0, Sent: PLOGI_ACC: 0
            LOGO: 0, Sent: LOGO_ACC: 0
            PRLI: 0, Sent: PRLI_ACC: 0
            ABTS: 0

    iSCSI Drop:
      Command: Target down 0, Task in progress 0, LUN map fail 0
               CmdSeqNo not in window 0, No Exchange ID 0, Reject 0
               Persistent Resv 0    Data-Out: 0, TMF-Req: 0
    FCP Drop:
      Xfer_rdy: 0, Data-In: 0, Response: 0

    Buffer Stats:
      Buffer less than header size: 0, Partial: 0, Split: 0
      Pullup give new buf: 0, Out of contiguous buf: 0, Unaligned m_data: 0

  iscsi8/2
      5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
      5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
      iSCSI statistics
        0 packets input, 0 bytes
          0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
        0 packets output, 0 bytes
          0 Response pdus (with sense 0), 0 R2T pdus
          0 Data-in pdus, 0 Data-in bytes
    iSCSI Forward:
      Command: 0 PDUs (Received: 0)
      Data-Out (Write): 0 PDUs (Received 0), 0 fragments, 0 bytes
    FCP Forward:
      Xfer_rdy: 0 (Received: 0)
      Data-In: 0 (Received: 0), 0 bytes
      Response: 0 (Received: 0), with sense 0
  ...
```

The following command displays detailed statistics for the specified iSCSI interface.

```
switch# show iscsi stats iscsi 8/1
iscsi8/1
    5 minutes input rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    5 minutes output rate 0 bits/sec, 0 bytes/sec, 0 frames/sec
    iSCSI statistics
      0 packets input, 0 bytes
        0 Command pdus, 0 Data-out pdus, 0 Data-out bytes, 0 fragments
      0 packets output, 0 bytes
        0 Response pdus (with sense 0), 0 R2T pdus
        0 Data-in pdus, 0 Data-in bytes
```

show iscsi virtual-target

To display all the iSCSI nodes that are local to the switch, use the **show iscsi virtual-target** command.

show iscsi virtual-target [**configured**] [*name*]

Syntax Description

configured	Show the information for all iSCSI ports.
name	Show iSCSI information for the specified virtual-target.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

If no parameter is provided the command lists all the active iSCSI virtual targets. If the iSCSI node name is provided then the command lists the details of that iSCSI virtual target.

Examples

The following example displays information on all the iSCSI virtual targets.

```
switch# show iscsi virtual-target
target: abc1
    Port WWN 21:00:00:20:37:a6:b0:bf
    Configured node
target: iqn.com.domainname.172.22.93.143.08-03.gw.22000020374b5247
    Port WWN 22:00:00:20:37:4b:52:47 , VSAN 1
    Auto-created node
...
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739aa39
    Port WWN 21:00:00:20:37:39:aa:39 , VSAN 1
    Auto-created node
```

The following example displays a specified iSCSI virtual target.

```
switch# show iscsi virtual-target
iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
target: iqn.com.domainname.172.22.93.143.08-03.gw.210000203739a95b
    Port WWN 21:00:00:20:37:39:a9:5b , VSAN 1
    Auto-created node
```

The following example displays the trespass status for a virtual target.

```
switch# show iscsi virtual-target iqn.abc
target: abc
    Port WWN 00:00:00:00:00:00:00:00
    Configured node
    all initiator permit is disabled
    trespass support is  enabled S
```

show isns

To display iSNS informaiton, use the **show isns** command.

show isns {**profile** [*profile-name* [**counters**] | **counters**] | **query** *profile-name* {**gigabitethernet** *slot*/*port* | **port-channel** *port*}}

Syntax Description

isns profile	Displays information for all iSNS profiles.
profile-name	Displays information for the specified iSNS profile.
counters	Displays iSNS PDU statistics for tagged interfaces for a specified iSNS profile or for all iSNS profiles
query *profile-name*	Specifies a query to send to the iSNS server.
gigabitethernet *slot*/*port*	Specifies a Gigabit Ethernet interface.
port-channel *port*	Specifies a PortChannel interface. The range is 1 to 128.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

If a specified profile is not provided the command lists all the configured iSNS profiles.

Specify the counters option to list the iSNS PDU statistics for interfaces that are tagged to the profile.

Examples

The following example displays a specified iSNS profile.

```
switch# show isns profile ABC

iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS Server 10.10.100.204
```

The following example displays all iSNS profiles

```
switch# show isns profile

iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS Server 10.10.100.204

iSNS profile name NBV
tagged interface GigabitEthernet2/5
iSNS Server 10.10.100.201
```

The following example displays iSNS PDU statistics for a specified iSNS profile.

```
switch# show isns profile ABC counters

iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.204
```

The following example displays iSNS PDU statistics for all iSNS profiles.

```
switch# show isns profile counters

iSNS profile name ABC
tagged interface GigabitEthernet2/3
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.204


iSNS profile name NBV
tagged interface GigabitEthernet2/5
iSNS statistics
  Input 54 pdus (registration/deregistration pdus only)
    Reg pdus 37,  Dereg pdus 17
  Output 54 pdus (registration/deregistration pdus only)
    Reg pdus  37,  Dereg pdus 17
iSNS Server  10.10.100.201
```

show ivr

To display various inter-VSAN routing (IVR) configurations, use the **show ivr** command.

show ivr [**status** | **virtual-domains** [**vsan** *vsan-id*] | **virtual-fcdomain-add-status** | **vsan-topology** [**active** | **configured**] | **zone** [**active** | **name** *name* [**active**]] | **zoneset** [**active** | **brief** | **fabric** | **name** *name* | **status**]]

Syntax Description

status	Displays the status of the configured IVR feature.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
virtual-domains	Displays IVR virtual domains for all local VSANs.
virtual-fcdomain-add-status	Displays IVR virtual fcdomain status.
vsan-topology	Displays the IVR VSAN topology
active	Displays the active IVR facilities.
configured	Displays the configured IVR facilities
zone	Displays the Inter-VSA Zone (IVZ) configurations.
name *name*	Specifies the name as configured in the database.
zoneset	Displays the Inter-VSA Zone Set (IVZS) configurations.
brief	Displays configured information in brief format.
fabric	Displays the status of active zone set in the fabric.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Command History

Release	Modification
1.3(1)	This command was introduced.
2.0(1)	Added the **pending** and **pending-diff** keywords.

Usage Guidelines

To access this command, you must perform the **ivr enable** command.

Examples

The following command displays the status of the IVR virtual domain configuration.

```
switch# show ivr virtual-fcdomain-add-status
IVR virtual domains are added to fcdomain list in VSANS: 1
(As well as to VSANs in interoperability mode 2 or 3)
```

The following example displays the status of the IVR feature

```
switch# show ivr status
Inter-VSAN Routing is enabled
```

The following example displays the configured IVR VSAN topology

```
switch# show ivr vsan-topology
AFID  SWITCH WWN                  Active   Cfg. VSANS
------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5

Total:   5 entries in active and configured IVR VSAN-Topology

Current Status: Inter-VSAN topology is ACTIVE
Last activation time: Sat Mar 22 21:46:15 1980
```

The following example displays the active IVR VSAN topology

```
switch# show ivr vsan-topology active
AFID  SWITCH WWN                  Active   Cfg. VSANS
------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5

Total:   5 entries in active IVR VSAN-Topology

Current Status: Inter-VSAN topology is ACTIVE
Last activation time: Sat Mar 22 21:46:15
```

The following example displays the configured IVR VSAN topology

```
switch# show ivr vsan-topology configured
AFID  SWITCH WWN                  Active   Cfg. VSANS
------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5

Total:   5 entries in configured IVR VSAN-Topology
```

The following example displays the IVZ configuration

```
switch# show ivr zone
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2

zone name ivr_qa_z_all
    pwwn 21:00:00:e0:8b:06:d9:1d vsan 1
    pwwn 21:01:00:e0:8b:2e:80:93 vsan 4
    pwwn 10:00:00:00:c9:2d:5a:dd vsan 1
    pwwn 10:00:00:00:c9:2d:5a:de vsan 2
    pwwn 21:00:00:20:37:5b:ce:af vsan 6
    pwwn 21:00:00:20:37:39:6b:dd vsan 6
    pwwn 22:00:00:20:37:39:6b:dd vsan 3
    pwwn 22:00:00:20:37:5b:ce:af vsan 3
    pwwn 50:06:04:82:bc:01:c3:84 vsan 5
```

The following example displays the active IVZS configuration

```
switch# show ivr zoneset active
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays information for a specified IVZ

```
switch# show ivr zone name Ivz_vsan2-3
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays the specified zone in the active IVZS

```
switch# show ivr zone name Ivz_vsan2-3 active
zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays the IVZS configuration

```
switch# show ivr zoneset
zoneset name ivr_qa_zs_all
  zone name ivr_qa_z_all
    pwwn 21:00:00:e0:8b:06:d9:1d vsan 1
    pwwn 21:01:00:e0:8b:2e:80:93 vsan 4
    pwwn 10:00:00:00:c9:2d:5a:dd vsan 1
    pwwn 10:00:00:00:c9:2d:5a:de vsan 2
    pwwn 21:00:00:20:37:5b:ce:af vsan 6
    pwwn 21:00:00:20:37:39:6b:dd vsan 6
    pwwn 22:00:00:20:37:39:6b:dd vsan 3
    pwwn 22:00:00:20:37:5b:ce:af vsan 3
    pwwn 50:06:04:82:bc:01:c3:84 vsan 5

zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

The following example displays brief information for an IVR VSAN topology

```
switch# show ivr vsan-topology configured
AFID  SWITCH WWN                 Active   Cfg. VSANS
--------------------------------------------------------------
   1  20:00:00:05:30:00:3c:5e     yes     yes  3,2000
   1  20:00:00:05:30:00:58:de     yes     yes  2,2000
   1  20:00:00:05:30:01:1b:c2 *   yes     yes  1-2
   1  20:02:00:44:22:00:4a:05     yes     yes  1-2,6
   1  20:02:00:44:22:00:4a:07     yes     yes  2-5

Total:   5 entries in configured IVR VSAN-Topology
```

The following example displays brief information for the active IVZS

```
switch# show ivr zoneset brief Active
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
```

The following example displays the status information for the IVZ

```
switch# show ivr zoneset brief status
Zoneset Status
______________
    name               : IVR_ZoneSet1
    state              : activation success
    last activate time : Sat Mar 22 21:38:46 1980
    force option       : off

status per vsan:
___________________
     vsan     status
     ____     ______
     2        active
```

The following example displays the specified zone set

```
switch# show ivr zoneset name IVR_ZoneSet1
zoneset name IVR_ZoneSet1
  zone name Ivz_vsan2-3
    pwwn 21:00:00:e0:8b:02:ca:4a vsan 3
    pwwn 21:00:00:20:37:c8:5c:6b vsan 2
```

Related Commands

Command	Description
ivr enable	Enables IVR.

show kernel core

To display kernel core configuration information, use the **show kernel core** command.

show kernel core {**limit** | **module** *slot* | **target**}

Syntax Description

limit	Displays the configured line card limit.
module *slot*	Displays the kernel core configuration for a module in the specified slot.
target	Displays the configured target IP address.

Defaults

None.

Command Modes

EXEC

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.1(1).

Usage Guidelines

None.

Examples

The following examples display kernel core settings.

```
switch# show kernel core limit
2

switch# show kernel core target
10.50.5.5

switch# show kernel core module 5
module 5 core is enabled
         level is header
         dst_ip is 10.50.5.5
         src_port is 6671
         dst_port is 6666
         dump_dev_name is eth1
         dst_mac_addr is 00:00:0C:07:AC:01
```

show license

To display license information, use the **show license** command.

show license [**brief** | **file** *filename* | **host-id** *license-name* | **usage**]

Syntax Description

brief	Displays a list of license files installed on a switch.
file *filename*	Displays information for a specific license file.
host-id *license-name*	Displays host ID used to request node-locked license.
usage	Displays information about the current license usage.

Defaults

None.

Command Modes

EXEC

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(2).

Usage Guidelines

None.

Examples

The following example displays a specific license installed on a switch.

```
switch# show license file fcports.lic
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
        SIGN=24B2B68AA676 <---------------------- fcport license
```

The following example displays a list of license files installed on a switch.

```
switch# show license brief
fcports.lic
ficon.lic
```

The following example displays all licenses installed on a switch.

```
switch# show license
fcports.lic:
SERVER this_host ANY
VENDOR cisco
FEATURE fcports cisco 1.000 permanent 30 HOSTID=VDH=4C0AF664 \
        SIGN=24B2B68AA676 <-------------------------fcport license
ficon.lic:
FEATURE ficon cisco 1.000 permanent uncounted HOSTID=VDH=4C0AF664 \
        SIGN=CB7872B23700 <----------------------------ficon license
```

The following example displays the host IDs, required to request node locked license.

```
switch# show license host-id
License hostid:VDH=4C0AF664
```

show line

To configure a virtual terminal line, use the **show line** command.

show line [**com1** [**user-input-string**] | **console** [**connected** | **user-input-string**]]

Syntax Description

com1	Displays aux line configuration.
user-input-string	Displays the user-input initial string.
console	Displays console line configuration.
connected	Displays the physical connection status.

Defaults

None.

Command Modes

EXEC.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

The following example displays configured console settings.

```
switch## show line console
line Console:
    Speed:        38400 bauds
    Databits:     8 bits per byte
    Stopbits:     1 bit(s)
    Parity:       none
```

The following example displays configured or default COM1 settings.

```
switch# show line com1
line Aux:
    Speed:        9600 bauds
    Databits:     8 bits per byte
    Stopbits:     1 bit(s)
    Parity:       none
    Modem In: Enable
    Modem Init-String -
        default : ATE0Q1&D2&C1S0=1\015
    Statistics:  tx:17     rx:0     Register Bits:RTS|CTS|DTR|DSR|CD|RI
```

Related Commands

Command	Description
line console	Configure primary terminal line.

Command	Description
line aux	Configures the auxiliary COM 1 port
clear line	Deleted configured line sessions.

show logging

To display the current system message logging configuration, use the **show logging** command.

show logging [**console** | **level** [**auth** | **authpriv** | **callhome** | **cron** | **daemon** | **ftp** | **kernel** | **local***n* |**lpr** | **mail** | **news** | **security** | **syslog** | **user** | **uucp** | **vsan**] | **info** | **last** *lines* | **logfile** | **module** | **monitor** | **nvram** | **server** *servername*]

Syntax Description

console	Displays console logging configuration.
info	Displays logging configuration.
last	Displays last few lines of logfile.
level	Displays last few lines of logfile.
logfile	Displays contents of logfile.
module	Displays module logging configuration.
monitor	Displays monitor logging configuration.
nvram	Displays NVRAM log.
server *servername*	Displays server logging configuration.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays current system message logging.

```
switch# show logging

Logging console:                 enabled (Severity: notifications)
Logging monitor:                 enabled (Severity: information)
Logging linecard:                enabled (Severity: debugging)
Logging server:                  enabled
{172.22.0.0}
        server severity:         debugging
        server facility:         local7
{172.22.0.0}
        server severity:         debugging
        server facility:         local7
Logging logfile:                 enabled
        Name - external/sampleLogFile: Severity - notifications Size - 3000000
```

```
syslog_get_levels :: Error(-1) querying severity values for fcmpls at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
kern                    6                       4
user                    3                       3
mail                    3                       3
daemon                  7                       7
auth                    0                       0
syslog                  3                       3
lpr                     3                       3
news                    3                       3
uucp                    3                       3
cron                    3                       3
authpriv                3                       3
ftp                     3                       3
local0                  3                       3
local1                  3                       3
local2                  3                       3
local3                  3                       3
local4                  3                       3
local5                  3                       3
local6                  3                       3
local7                  3                       3
fspf                    3                       3
fcdomain                2                       2
module                  5                       5
zone                    2                       2
vni                     2                       2
ipconf                  2                       2
ipfc                    2                       2
xbar                    3                       3
fcns                    2                       2
fcs                     2                       2
acl                     2                       2
tlport                  2                       2
port                    5                       5
port_channel            5                       5
fcmpls                  0                       0
wwn                     3                       3
fcc                     2                       2
qos                     3                       3
vrrp_cfg                2                       2
fcfwd                   0                       0
ntp                     2                       2
platform                5                       5
vrrp_eng                2                       2
callhome                2                       2
mcast                   2                       2
rscn                    2                       2
securityd               2                       2
vhbad                   2                       2
rib                     2                       2
vshd                    5                       5

0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)

Nov  8 16:48:04 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/1 (171.71.58.56)
Nov  8 17:44:09 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/0 (171.71.58.72)
```

The following example displays console logging status.

```
switch# show logging console
Logging console:                enabled (Severity: notifications)
```

The following example displays logging facility status.

```
switch# show logging facility
syslog_get_levels :: Error(-1) querying severity values for fcmpls at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
kern                    6                       4
user                    3                       3
mail                    3                       3
daemon                  7                       7
auth                    0                       0
syslog                  3                       3
lpr                     3                       3
news                    3                       3
uucp                    3                       3
cron                    3                       3
authpriv                3                       3
ftp                     3                       3
local0                  3                       3
local1                  3                       3
local2                  3                       3
local3                  3                       3
local4                  3                       3
local5                  3                       3
local6                  3                       3
local7                  3                       3
fspf                    3                       3
fcdomain                2                       2
module                  5                       5
zone                    2                       2
vni                     2                       2
ipconf                  2                       2
ipfc                    2                       2
xbar                    3                       3
fcns                    2                       2
fcs                     2                       2
acl                     2                       2
tlport                  2                       2
port                    5                       5
port_channel            5                       5
fcmpls                  0                       0
wwn                     3                       3
fcc                     2                       2
qos                     3                       3
vrrp_cfg                2                       2
fcfwd                   0                       0
ntp                     2                       2
platform                5                       5
vrrp_eng                2                       2
callhome                2                       2
mcast                   2                       2
rscn                    2                       2
securityd               2                       2
vhbad                   2                       2
rib                     2                       2
vshd                    5                       5
```

```
0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

The following example displays logging information.

```
switch# show logging info

Logging console:                enabled (Severity: notifications)
Logging monitor:                enabled (Severity: information)
Logging linecard:               enabled (Severity: debugging)
Logging server:                 enabled
{172.22.95.167}
        server severity:        debugging
        server facility:        local7
{172.22.92.58}
        server severity:        debugging
        server facility:        local7
Logging logfile:                enabled
        Name - external/sampleLogFile: Severity - notifications Size - 3000000

syslog_get_levels :: Error(-1) querying severity values for fcmpls at SAP 30
syslog_get_levels :: Error(-1) querying severity values for fcfwd at SAP 38
Facility        Default Severity        Current Session Severity
--------        ----------------        ------------------------
kern                    6                       4
user                    3                       3
mail                    3                       3
daemon                  7                       7
auth                    0                       0
syslog                  3                       3
lpr                     3                       3
news                    3                       3
uucp                    3                       3
cron                    3                       3
authpriv                3                       3
ftp                     3                       3
local0                  3                       3
local1                  3                       3
local2                  3                       3
local3                  3                       3
local4                  3                       3
local5                  3                       3
local6                  3                       3
local7                  3                       3
fspf                    3                       3
fcdomain                2                       2
module                  5                       5
zone                    2                       2
vni                     2                       2
ipconf                  2                       2
ipfc                    2                       2
xbar                    3                       3
fcns                    2                       2
fcs                     2                       2
acl                     2                       2
tlport                  2                       2
port                    5                       5
port_channel            5                       5
fcmpls                  0                       0
wwn                     3                       3
fcc                     2                       2
qos                     3                       3
vrrp_cfg                2                       2
```

```
fcfwd                   0                       0
ntp                     2                       2
platform                5                       5
vrrp_eng                2                       2
callhome                2                       2
mcast                   2                       2
rscn                    2                       2
securityd               2                       2
vhbad                   2                       2
rib                     2                       2
vshd                    5                       5

0(emergencies)          1(alerts)       2(critical)
3(errors)               4(warnings)     5(notifications)
6(information)          7(debugging)
```

The following example displays last few lines of a log file.

```
switch# show logging last 2
Nov  8 16:48:04 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/1 (171.71.58.56)
Nov  8 17:44:09 excal-113 %LOG_VSHD-5-VSHD_SYSLOG_CONFIG_I: Configuring console
from pts/0 (171.71.58.72)
```

The following example displays switching module logging status.

```
switch# show logging module
Logging linecard:               enabled (Severity: debugging)
```

The following example displays monitor logging status.

```
switch# show logging monitor
Logging monitor:                enabled (Severity: information)
```

The following example displays server information.

```
switch# show logging server
Logging server:                 enabled
{172.22.95.167}
        server severity:        debugging
        server facility:        local7
{172.22.92.58}
        server severity:        debugging
        server facility:        local7
```

show module

To verify the status of a module, use the **show module** command.

show module [*slot* | **diag** | **uptime**]

Syntax Description

slot	Specifies the slot number for the module.
diag	Displays module-related information.
uptime	Displays the length of time that the modules have been functional in the switch.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

If your chassis has more than one switching module, you will see the progress check if you issue the show module command several times and view the status column each time.

The switching module goes through a testing and an initializing stage before displaying an `ok` status.

The following table describes the possible states in which a module can exist.

show module Output	Description
`powered up`	The hardware has electrical power. When the hardware is powered up, the software begins booting.
`testing`	The module has established connection with the supervisor and the switching module is performing bootup diagnostics.
`initializing`	The diagnostics have passed and the configuration is being downloaded.
`failure`	The switch detects a switching module failure on initialization and automatically attempts to power-cycle the module three (3) times. After the third attempt it continues to display a failed state.
`ok`	The switch is ready to be configured.
`power-denied`	The switch detects insufficient power for a switching module to power up. In this case, issue a **show environment power** command to determine power consumption issues.
`active`	This module is the active supervisor module and the switch is ready to be configured.

show module Output	Description
HA-standby	This module is the standby supervisor module and that the HA switchover mechanism is enabled.
standby	This module is the standby supervisor module.

Use the **uptime** option to display the time that a specified supervisor module, switching module, or services module is functional in the switch. This time is computed from the time a module goes online after a disruptive upgrade or reset.

Examples

The following example displays information about the modules on the switch.

```
switch# show module
Mod  Ports  Module-Type                      Model              Status
---  -----  -------------------------------- ------------------ ------------
2    32     Advanced Services Module         DS-X9032-SMV       powered-dn
4    32     Advanced Services Module         DS-X9032-SMV       powered-dn
5    0      Supervisor/Fabric-1              DS-X9530-SF1-K9    active *
6    0      Supervisor/Fabric-1              DS-X9530-SF1-K9    ha-standby
8    32     1/2 Gbps FC Module               DS-X9032           ok

Mod  Sw           Hw      World-Wide-Name(s) (WWN)
---  -----------  ------  --------------------------------------------------
5    1.2(2)       0.610   --
6    1.2(2)       0.610   --
8    1.2(2)       0.3     21:c1:00:0b:46:79:f1:40 to 21:e0:00:0b:46:79:f1:40


Mod  MAC-Address(es)                         Serial-Num
---  --------------------------------------  ----------
5    00-d0-97-38-b4-01 to 00-d0-97-38-b4-05  JAB06350B0H
6    00-d0-97-38-b3-f9 to 00-d0-97-38-b3-fd  JAB06350B1R
8    00-05-30-00-2b-e2 to 00-05-30-00-2b-e6  jab062407x4

* this terminal session
```

The following example displays diagnostic information about the modules on the switch.

```
switch# show module diag

Diag status for module 2 (. = PASS, F = FAIL, N = N/A)
CPU           .
SPROM         .
ASICS         .

Diag status for module 4 (. = PASS, F = FAIL, N = N/A)
CPU           .
SPROM         .
ASICS         .
```

The following example displays uptime information about the modules on the switch.

```
switch#  show module uptime
------ Module 1 -----
Module Start Time:   Wed Apr 14 18:12:48 2004
Up Time:             16 days, 5 hours, 59 minutes, 41 seconds

------ Module 6 -----
Module Start Time:   Wed Apr 14 18:11:57 2004
Up Time:             16 days, 6 hours, 0 minutes, 32 seconds
```

show ntp

To display the configured Network Time Protocol (NTP) server and peer associations, use the **show ntp** command.

show ntp {**peers** | **statistics** [**io** | **local** | **memory** | **peer** {**ipaddr** *ip-address* | **name** *peer-name*}] | **timestamp-status**}

Syntax Description

peers	Displays all the peers.
statistics	Displays the NTP statistics
io	Displays the input/output statistics.
local	Displays the counters maintained by the local NTP.
memory	Displays the statistics counters related to memory code.
peer	Displays the per-peer statistics counter of a peer.
ipaddr *ip-address*	Displays the peer statistics for the specified IP address.
name *peer-name*	Displays the peer statistics for the specified peer name.
timestamp-status	Displays if the timestamp check is enabled.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following examples display the NTP information.

```
switch# show ntp peers
-----------------------------------------------
  Peer IP Address                Serv/Peer
-----------------------------------------------
  10.20.10.2                     Server
  10.20.10.0                     Peer

switch# show ntp statistics io
time since reset:     11152
receive buffers:      9
free receive buffers: 9
used receive buffers: 9
low water refills:    0
dropped packets:      0
ignored packets:      0
received packets:     3
packets sent:         2
packets not sent:     0
interrupts handled:   3
received by int:      3

switch# show ntp statistics local
system uptime:          11166
time since reset:       11166
bad stratum in packet:  0
old version packets:    4
new version packets:    0
unknown version number: 0
bad packet format:      0
packets processed:      0
bad authentication:     0

switch# show ntp statistics memory
time since reset:     11475
total peer memory:    15
free peer memory:     15
calls to findpeer:    0
new peer allocations: 0
peer demobilizations: 0
hash table counts:      0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0
                        0   0   0   0   0   0   0   0

switch# show ntp statistics peer ipaddr 10.1.1.1

switch# show ntp statistics peer name Peer1

switch# show ntp timestamp-status
Linecard 9 does not support Timestamp check.
```

show port-channel

Use the **show port-channel** command to view information about existing PortChannel configurations

show port-channel {**compatibility-parameters** | **consistency** [**detail**] | **database** [**interface port-channel** *port-channel-number*] | **summary** | **usage**}

Syntax Description

compatibility-parameters	Displays compatibility parameters.
consistency	Displays the database consistency information of all modules.
detail	Displays detailed database consistency information.
database	Displays PortChannel database information.
interface port-channel *port-channel-number*	Specifies the PortChannel number. The range is 1 to 128.
summary	Displays PortChannel summary.
usage	Displays PortChannel number usage.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the PortChannel summary.

```
switch# show port-channel summary
NEW
```

The following example displays the PortChannel compatibility.

```
switch# show port-channel compatibility-parameters
    physical port layer                fibre channel or ethernet
    port mode                          E/TE/AUTO only
    trunk mode
    speed
    port VSAN
    port allowed VSAN list
```

The following example displays the PortChannel database.

```
switch# show port-channel database
port-channel 2
    Administrative channel mode is on
    Operational channel mode is on
    Last membership update succeeded
    First operational port is fc2/2
    1 port in total, 1 port up
    Ports:   fc2/2    [up]
```

The **show port-channel consistency** command has two options—without detail **and detail**.

Command Without Details

```
switch# show port-channel consistency
Database is consistent
switch#
```

Command With Details

```
switch# show port-channel consistency detail
Authoritative port-channel database:
============================================
totally 1 port-channels
port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
database 1: from module 5
============================================
totally 1 port-channels

port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
database 2: from module 2
============================================
totally 1 port-channels
port-channel 2:
    1 ports, first operational port is fc2/2
    fc2/2    [up]
============================================
```

The **show port-channel usage** command displays details of the used and unused PortChannel numbers.

PortChannel Usage

```
switch# show port-channel usage
Totally 2 port-channel numbers used
===================================
Used  :   3, 9
Unused:   1-2, 4-8, 10-128
```

show port-security

To display configured port security feature information, use the **show port-security database** command.

show port-security
{**database** [**active** [**vsan** *vsan-id*]] | **fwwn** *fwwn-id* **vsan** *vsan-id* | **interface** {**fc** *slot/port* | **port-channel** *port*} **vsan** *vsan-id* | **vsan** *vsan-id*] |
statistics [**vsan** *vsan-id*] |
status [**vsan** *vsan-id*] |
violations [**last** *count* | **vsan** *vsan-id*]}

Syntax Description

database	Displays database-related port security information.
active	Displays the activated database information.
vsan *vsan-id*	Displays information for the specified database.
fwwn *fwwn-id*	Displays information for the specified fabric WWN.
interface	Displays information for an interface.
fc *slot/port*	Displays information for the specified Fibre Channel interface.
port-channel *port*	Displays information for the specified PortChannel interface. The range is 1 to 128.
statistics	Displays port security statistics.
status	Displays the port security status on a per VSAN basis.
violations	Displays violations in the port security database.
last *count*	Displays the last number of lines in the database. The range is 1 to 100.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

The access information for each port can be individually displayed. If you specify the fwwn or interface options, all devices that are paired in the active database (at that point) with the given fWWN or the interface are displayed.

The **show port-security** command issued with the **last** *number* option displays only the specified number of entries that appear first.

Examples

The following example displays the contents of the port security database.

```
switch# show port-security database
--------------------------------------------------------------------------------
VSAN    Logging-in Entity             Logging-in Point(      Interface)
```

```
--------------------------------------------------------------------------------
1       21:00:00:e0:8b:06:d9:1d(pwwn) 20:0d:00:05:30:00:95:de(fc1/13)
1       50:06:04:82:bc:01:c3:84(pwwn) 20:0c:00:05:30:00:95:de(fc1/12)
2       20:00:00:05:30:00:95:df(swwn) 20:0c:00:05:30:00:95:de(port-channel 128)
3       20:00:00:05:30:00:95:de(swwn) 20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the output of the activated port security database in VSAN 1.

```
switch# show port-security database vsan 1
--------------------------------------------------------------------------------
Vsan   Logging-in Entity              Logging-in Point        (Interface)
--------------------------------------------------------------------------------
1                  *                  20:85:00:44:22:00:4a:9e (fc3/5)
1      20:11:00:33:11:00:2a:4a(pwwn)  20:81:00:44:22:00:4a:9e (fc3/1)
[Total 2 entries]
```

The following example displays the activated database.

```
switch# show port-security database active
--------------------------------------------------------------------------------
VSAN    Logging-in Entity             Logging-in Point(      Interface)     Learnt
--------------------------------------------------------------------------------
1       21:00:00:e0:8b:06:d9:1d(pwwn) 20:0d:00:05:30:00:95:de(fc1/13)          Yes
1       50:06:04:82:bc:01:c3:84(pwwn) 20:0c:00:05:30:00:95:de(fc1/12)          Yes
2       20:00:00:05:30:00:95:df(swwn) 20:0c:00:05:30:00:95:de(port-channel 128)Yes
3       20:00:00:05:30:00:95:de(swwn) 20:01:00:05:30:00:95:de(fc1/1)
[Total 4 entries]
```

The following example displays the wildcard fwwn port security in VSAN 1.

```
switch# show port-security database fwwn 20:85:00:44:22:00:4a:9e vsan 1
Any port can login thru' this fwwn
```

The following example displays the configured fWWN port security in VSAN 1.

```
switch# show port-security database fwwn 20:01:00:05:30:00:95:de vsan 1
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example displays the interface port information in VSAN 2.

```
switch# show port-security database interface fc 1/1 vsan 2
20:00:00:0c:88:00:4a:e2(swwn)
```

The following example port security statistics.

```
switch# show port-security statistics
Statistics For VSAN: 1
-----------------------
Number of pWWN permit: 2
Number of nWWN permit: 2
Number of sWWN permit: 2
Number of pWWN deny  : 0
Number of nWWN deny  : 0
Number of sWWN deny  : 0

Total Logins permitted  : 4
Total Logins denied     : 0
Statistics For VSAN: 2
-----------------------
Number of pWWN permit: 0
Number of nWWN permit: 0
Number of sWWN permit: 2
Number of pWWN deny  : 0
Number of nWWN deny  : 0
```

```
Number of sWWN deny  : 0
...
```

The following example displays the status of the active database and the auto-learn configuration.

```
switch# show port-security status
VSAN 1 :Activated database, auto-learning is enabled
VSAN 2 :No Active database, auto-learning is disabled
...
```

The following example displays the previous 100 violations.

```
switch# show port-security violations

-------------------------------------------------------------------------------------
VSAN    Interface      Logging-in Entity             Last-Time              [Repeat count]
-------------------------------------------------------------------------------------
1       fc1/13         21:00:00:e0:8b:06:d9:1d(pwwn) Jul  9 08:32:20 2003   [20]
                       20:00:00:e0:8b:06:d9:1d(nwwn)
1       fc1/12         50:06:04:82:bc:01:c3:84(pwwn) Jul  9 08:32:20 2003   [1]
                       50:06:04:82:bc:01:c3:84(nwwn)
2       port-channel 1 20:00:00:05:30:00:95:de(swwn) Jul  9 08:32:40 2003   [1]
[Total 2 entries]
```

show processes

To display general information about all the processes, use the **show processes** command.

show processes [**cpu** | **log** [**details** | **pid** *process-id*] | **memory**]

Syntax Description

cpu	Displays processes CPU information.
log	Displays information about process logs.
details	Displays detailed process log information.
pid *process-id*	Displays process information about a specific process ID. The range is 0 to 2147483647.
memory	Displays processes memory information.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following examples display general information about system processes.

```
switch# show process
PID    State  PC        Start_cnt    TTY   Process
-----  -----  --------  -----------  ----  -------------
  868      S  2ae4f33e            1     -  snmpd
  869      S  2acee33e            1     -  rscn
  870      S  2ac36c24            1     -  qos
  871      S  2ac44c24            1     -  port-channel
  872      S  2ac7a33e            1     -  ntp
    -     ER         -            1     -  mdog
    -     NR         -            0     -  vbuilder

PID: process ID.

State: process state

       D   uninterruptible sleep (usually IO)
       R   runnable (on run queue)
       S   sleeping
       T   traced or stopped
       Z   a defunct ("zombie") process

    NR  not-running
    ER  should be running but currently not-running
```

```
PC: Current program counter in hex format

Start_cnt: how many times a process has been started.

TTY: Terminal that controls the process. A "-" usually means a daemon not
     running on any particular tty.

Process: name of the process.

==================================================

2. show processes cpu (new output)
Description: show cpu utilization information about the processes.

switch# show processes cpu

PID    Runtime(ms)  Invoked   uSecs  1Sec   Process
-----  -----------  --------  -----  -----  -----------
  842         3807    137001     27    0.0  sysmgr
 1112         1220     67974     17    0.0  syslogd
 1269          220     13568     16    0.0  fcfwd
 1276         2901     15419    188    0.0  zone
 1277          738     21010     35    0.0  xbar_client
 1278         1159      6789    170    0.0  wwn
 1279          515     67617      7    0.0  vsan

Runtime(ms): cpu time the process has used, expressed in milliseconds
Invoked: Number of times the process has been invoked.
uSecs:  Microseconds of CPU time in average for each process invocation.
1Sec:    CPU utilization in percentage for the last 1 second.

==================================================
3. show processes mem
Description: show memory information about the processes.

PID    MemAlloc  StackBase/Ptr      Process
-----  --------  -----------------  ----------------
 1277    120632  7ffffcd0/7fffefe4  xbar_client
 1278     56800  7ffffce0/7ffffb5c  wwn
 1279   1210220  7ffffce0/7ffffbac  vsan
 1293    386144  7ffffcf0/7fffebd4  span
 1294   1396892  7ffffce0/7fffdff4  snmpd
 1295    214528  7ffffcf0/7ffff904  rscn
 1296     42064  7ffffce0/7ffffb5c  qos

MemAlloc: total memory allocated by the process.
StackBase/Ptr: process stack base and current stack pointer in hex format

==================================================
3. show processes log
Description: list all the process logs

switch# show processes log
Process           PID     Normal-exit  Stack-trace  Core     Log-create-time
----------------  ------  -----------  -----------  -------  ---------------
fspf              1339              N            Y        N  Jan  5 04:25
lichen               1559              N            Y        N  Jan  2 04:49
rib               1741              N            Y        N  Jan  1 06:05

Normal-exit: whether or not the process exited normally.
Stack-trace: whether or not there is a stack trace in the log.
Core: whether or not there exists a core file.
Log-create-time: when the log file got generated.
```

The following example displays the detail log information about a particular process.

```
switch# show processes log pid 1339
Service: fspf
Description: FSPF Routing Protocol Application

Started at Sat Jan  5 03:23:44 1980 (545631 us)
Stopped at Sat Jan  5 04:25:57 1980 (819598 us)
Uptime: 1 hours 2 minutes 2 seconds

Start type: SRV_OPTION_RESTART_STATELESS (23)
Death reason: SYSMGR_DEATH_REASON_FAILURE_SIGNAL (2)
Exit code: signal 9 (no core)
CWD: /var/sysmgr/work

Virtual Memory:

    CODE      08048000 - 0809A100
    DATA      0809B100 - 0809B65C
    BRK       0809D988 - 080CD000
    STACK     7FFFFD20
    TOTAL     23764 KB

Register Set:

    EBX 00000005         ECX 7FFFF8CC         EDX 00000000
    ESI 00000000         EDI 7FFFF6CC         EBP 7FFFF95C
    EAX FFFFFDFE         XDS 8010002B         XES 0000002B
    EAX 0000008E (orig)  EIP 2ACE133E         XCS 00000023
    EFL 00000207         ESP 7FFFF654         XSS 0000002B

Stack: 1740 bytes. ESP 7FFFF654, TOP 7FFFFD20

0x7FFFF654: 00000000 00000008 00000003 08051E95 ................
0x7FFFF664: 00000005 7FFFF8CC 00000000 00000000 ................
0x7FFFF674: 7FFFF6CC 00000001 7FFFF95C 080522CD ........\....".."
0x7FFFF684: 7FFFF9A4 00000008 7FFFFC34 2AC1F18C ........4......*
```

show qos

To display the current QoS settings along with a the number of frames marked high priority, use the **show qos** command.

show qos {**class-map [name** *class-name*] | **dwrr** | **policy-map [name** *policy-name*] | **service policy** [**interface fc** *slot*/*port* | **vsan** *vsan-id*] | **statistics**}

Syntax Description

class-map	Displays QoS class maps.
name *class-name*	Specifies a class map name. Maximum length is 63 alpha-numeric characters.
dwrr	Displays deficit weighted round robin queue weights.
policy-map	Displays QoS policy-maps.
name *policy-name*	Specifies a policy map name. Maximum length is 63 alpha-numeric characters.
service policy	Displays QoS service policy associations.
interface fc *slot*/*port*	Specifies a Fibre Channel interface.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
statistics	Displays QoS related statistics.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

To access all but the **statistics** option for this command, you must perform the **qos enable** command.

Examples

The following example displays the contents of all class maps.

```
switch# show qos class-map
qos class-map MyClass match-any
    match dest-wwn 20:01:00:05:30:00:28:df
    match src-wwn 23:15:00:05:30:00:2a:1f
    match src-intf fc2/1
qos class-map Class2 match-all
    match src-intf fc2/14
qos class-map Class3 match-all
    match src-wwn 20:01:00:05:30:00:2a:1f
```

The following example displays the contents of a specified class map.

```
switch# show qos class-map name MyClass
qos class-map MyClass match-any
    match dest-wwn 20:01:00:05:30:00:28:df
    match src-wwn 23:15:00:05:30:00:2a:1f
    match src-intf fc2/1
```

The following example displays all configured policy maps.

```
switch# show qos policy-map
qos policy-map MyPolicy
    class MyClass
    priority medium

qos policy-map Policy1
    class Class2
    priority low
```

The following example displays a specified policy map.

```
switch# show qos policy-map name MyPolicy
qos policy-map MyPolicy
    class MyClass
        priority medium
```

The following example displays scheduled DWRR configurations

```
switch# show qos dwrr
qos dwrr-q high weight 50
qos dwrr-q medium weight 30
qos dwrr-q low weight 20
```

The following example displays all applied policy maps.

```
switch# show qos service policy
qos service policy MyPolicy vsan 1
qos service policy Policy1 vsan 4
```

The following example displays QoS statistics.

```
switch# show qos statistics
Total number of FC frames transmitted from the Supervisor= 301431
Number of highest-priority FC frames transmitted         = 137679
Current priority of FC control frames = 7    (0 = lowest; 7 = highest)
```

show radius-server

To display all configured RADIUS server parameters, use the **show radius-server** command.

show radius-server [**groups** | **sorted**]

Syntax Description

groups	Displays configured RADIUS server group information.
sorted	Displays RADIUS server information sorted by name.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

Only administrators can view the RADIUS pre-shared key.

Examples

```
switch# show radius-server
Global RADIUS shared secret:Myxgqc
retransmission count:5
timeout value:10

following RADIUS servers are configured:
        myradius.cisco.users.com:
                available for authentication on port:1812
                available for accounting on port:1813
        172.22.91.37:
                available for authentication on port:1812
                available for accounting on port:1813
                RADIUS shared secret:23MHcUnD
        10.10.0.0:
                available for authentication on port:1812
                available for accounting on port:1813
               RADIUS shared secret:hostkey----> for administrators only
```

show rlir

To display the information about Registered Link Incident Report (RLIR), Link Incident Record Registration (LIRR), and Distribute Registered Link Incident Record (DRLIR) frames, use the **show rlir** command.

show rilr {**erl** [**vsan** *vsan-id*] | **history** | **recent** [**interface fc** *slot/port* | **portnumber** *port-number*] | **statistics** [**vsan** *vsan-id*]}

Syntax Description

erl *vsan-id*	Displays Established Registration List (ERL) information.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.
history	Displays link incident history.
recent	Displays recent link incident.
interface fc *slot/port*	Specifies a Fibre Channel interface at a slot and port.
portnumber *port-number*	Specifies a port number for the link incidents. The range is 1 to 224.
statistics	Displays RLIR statistics.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(2).

Usage Guidelines

If available, the host timestamp (marked by the *) is printed along with the switch timestamp. If the host timestamp is not available, only the switch timestamp is printed.

Examples

The following example displays the RLIR statistics for all VSANs.

```
switch# show rlir statistics

Statistics for VSAN: 1
------------------------

Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
```

```
Statistics for VSAN: 4
-------------------------

Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0


Statistics for VSAN: 61
-------------------------

Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
```

The following example displays the RLIR statistics for a specified VSAN.

```
switch# show rlir statistics vsan 4

Statistics for VSAN: 4
-------------------------

Number of LIRR received      = 0
Number of LIRR ACC sent      = 0
Number of LIRR RJT sent      = 0
Number of RLIR sent          = 0
Number of RLIR ACC received  = 0
Number of RLIR RJT received  = 0
Number of DRLIR received     = 0
Number of DRLIR ACC sent     = 0
Number of DRLIR RJT sent     = 0
Number of DRLIR sent         = 0
Number of DRLIR ACC received = 0
Number of DRLIR RJT received = 0
```

The following example displays the RLIR statistics for all ERLs.

```
switch# show rlir erl

Established Registration List for VSAN: 2
-------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
-------------------------------------------
0x0b0200    0x18           always receive
```

```
Total number of entries = 1

Established Registration List for VSAN: 100
---------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
---------------------------------------------
0x0b0500    0x18           conditional receive
0x0b0600    0x18           conditional receive
Total number of entries = 2
```

The following example displays the ERLs for the specified VSAN.

```
switch# show rlir erl vsan 100
Established Registration List for VSAN: 100
---------------------------------------------
FC-ID       LIRR FORMAT    REGISTERED FOR
---------------------------------------------
0x0b0500    0x18           conditional receive
0x0b0600    0x18           conditional receive

Total number of entries = 2
```

The following example displays the RLIR history.

```
switch# show rlir history
Link incident history
-------------------------------------------------------------------------------
*Host Time Stamp
 Switch Time Stamp          Port   Interface   Link Incident
-------------------------------------------------------------------------------
*Sun Nov 30 21:47:28 2003
 Sun Nov 30 13:47:55 2003     2        fc1/2   Implicit Incident
*Sun Nov 30 22:00:47 2003
 Sun Nov 30 14:01:14 2003     2        fc1/2   NOS Received
*Sun Nov 30 22:00:55 2003
 Sun Nov 30 14:01:22 2003     2        fc1/2   Implicit Incident
*Mon Dec 1 20:14:26 2003
 Mon Dec  1 12:14:53 2003     4        fc1/4   Implicit Incident
*Mon Dec 1 20:14:26 2003
 Mon Dec  1 12:14:53 2003     4        fc1/4   Implicit Incident
*Thu Dec 4 04:43:32 2003
 Wed Dec  3 20:43:59 2003     2        fc1/2   NOS Received
*Thu Dec 4 04:43:41 2003
 Wed Dec  3 20:44:08 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 04:46:53 2003
 Wed Dec  3 20:47:20 2003     2        fc1/2   NOS Received
*Thu Dec 4 04:47:05 2003
 Wed Dec  3 20:47:32 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 04:48:07 2003
 Wed Dec  3 20:48:34 2003     2        fc1/2   NOS Received
*Thu Dec 4 04:48:39 2003
 Wed Dec  3 20:49:06 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 05:02:20 2003
 Wed Dec  3 21:02:47 2003     2        fc1/2   NOS Received
*Thu Dec 4 05:02:29 2003
 Wed Dec  3 21:02:56 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 05:02:47 2003
 Wed Dec  3 21:03:14 2003     4        fc1/4   NOS Received
*Thu Dec 4 05:02:54 2003
 Wed Dec  3 21:03:21 2003     4        fc1/4   Implicit Incident
*Thu Dec 4 05:02:54 2003
 Wed Dec  3 21:03:21 2003     4        fc1/4   Implicit Incident
...
```

The following example displays recent RLIRs for a specified interface.

```
switch# show rlir recent interface fc1/1
Recent link incident records
-------------------------------------------------------------------------------
*Host Time Stamp
 Switch Time Stamp          Port   Interface   Link Incident
-------------------------------------------------------------------------------


*Thu Dec 4 05:02:29 2003
 Wed Dec  3 21:02:56 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 05:02:54 2003
 Wed Dec  3 21:03:21 2003     4        fc1/4   Implicit Incident
switch#
```

The following example displays the recent RLIRs for a specified port number.

```
switch# show rlir recent portnumber 1
Recent link incident records
-------------------------------------------------------------------------------
*Host Time Stamp
 Switch Time Stamp          Port   Interface   Link Incident
-------------------------------------------------------------------------------


*Thu Dec 4 05:02:29 2003
 Wed Dec  3 21:02:56 2003     2        fc1/2   Implicit Incident
*Thu Dec 4 05:02:54 2003
 Wed Dec  3 21:03:21 2003     4        fc1/4   Implicit Incident
```

show role

To display roles (and their associated rules) configured on the switch, including those roles that have not yet been committed to persistent storage, use the **show role** command.

show role [**name** *string*]

Syntax Description

name *string*	The name of the role for which you want to display information.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

The rules are displayed by rule number and are based on each role. All roles are displayed when a role name is not specified.

Only network-admin role can access this command.

Examples

The following example displays rule information for all roles on the switch.

```
switch# show role
Role: network-admin
Description: Predefined Network Admin group. This role cannot be modified
Access to all the switch commands

Role: network-operator
Description: Predefined Network Operator group. This role cannot be modified
Access to Show commands and selected Exec commands

Role: sangroup
Description: SAN management group
----------------------------------------
Rule   Type   Command-type   Feature
----------------------------------------
  1.   permit    config           *
  2.     deny    config        fspf
  3.   permit     debug        zone
  4.   permit      exec      fcping
```

show rscn

To display registered state change notification (RSCN) information, use the **show rscn** command.

show rscn {**scr-table** [**vsan** *vsan-id*] | **statistics** [**vsan** *vsan-id*]}

Syntax Description

scr-table	Displays State Change Registration table.
statistics	Displays RSCN statistics.
vsan *vsan-id*	Specifies a VSAN ID. The range is 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

The SCR table cannot be configured, it is only populated if one or more Nx ports send SCR frames to register for RSCN information. If the **show rscn scr-table** command does not return any entries, no Nx port is interested in receiving RSCN information.

Examples

The following examples display RSCN information.

```
switch# show rscn scr-table vsan 1
SCR table for VSAN: 1
---------------------------------------------
FC-ID         REGISTERED FOR
---------------------------------------------
0x1b0300      fabric detected rscns

Total number of entries = 1
```

```
switch# show rscn statistics vsan 1

Statistics for VSAN: 1
-----------------------

Number of SCR received         = 0
Number of SCR ACC sent         = 0
Number of SCR RJT sent         = 0
Number of RSCN received        = 0
Number of RSCN sent            = 0
Number of RSCN ACC received    = 0
Number of RSCN ACC sent        = 0
Number of RSCN RJT received    = 0
Number of RSCN RJT sent        = 0
Number of SW-RSCN received     = 0
Number of SW-RSCN sent         = 0
Number of SW-RSCN ACC received = 0
Number of SW-RSCN ACC sent     = 0
Number of SW-RSCN RJT received = 0
Number of SW-RSCN RJT sent     = 0
```

show running-config

To display the running configuration file, use the **show running-config** command

show running-config
[**diff** |
interface [cpp | **fc** | **fc** *slot*/*port* | **fc-tunnel** *tunnel-id* | **fcip** *fcip-number* | **gigabitethernet** *slot*/*port* | **iscsi** *slot*/*port* | **mgmt 0** | **port-channel** | **svc** | **vsan** *vsan-id*] |
vsan *vsan-id*]

Syntax Description

diff	Displays the difference between the running and startup configurations.
interface	Displays running configuration information for a range of interfaces.
cpp	Displays the virtualization interface specific to the ASM module.
fc *slot*/*port*	Displays the Fibre Channel interface in the specified slot and port.
fc-tunnel *tunnel-id*	Displays description of the specified FC tunnel from 1 to 4095.
fcip *fcip-number*	Displays the description of the specified FCIP interface from 1 to 255.
gigabitethernet *slot*/*port*	Displays the description of the Gigabit Ethernet interface in the specified slot and port.
iscsi *slot*/*port*	Displays the description of the iSCSI interface in the specified slot and port.
mgmt 0	Displays the description of the management interface.
port-channel	Displays the description of the PortChannel interface.
sup-fc	Displays the inband interface details.
svc	Displays the virtualization interface specific to the CSM module.
vsan *vsan-id*	Displays VSAN-specific information. The ID ranges from 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

If the running configuration is different from the startup configuration, issue the **show startup-config diff** command to view the differences.

Examples

The following example displays the configuration currently running on the switch.

```
switch# show running-config
Building Configuration ...
 interface fc1/1
 interface fc1/2
 interface fc1/3
 interface fc1/4
 interface mgmt0
ip address 172.22.95.112 255.255.255.0
no shutdown
vsan database
boot system bootflash:isan-237; sup-1
boot kickstart bootflash:boot-237 sup-1
callhome
ip default-gateway 172.22.95.1
switchname switch
trunk protocol enable
username admin password 5 /AFDAMD4B2xK2  role network-admin
```

The following example displays the difference between the running configuration and the startup configuration.

```
switch# show running-config diff
Building Configuration ...
*** Startup-config
--- Running-config
***************** 1,16 ****
  fcip enable

  ip default-gateway 172.22.91.1

  iscsi authentication none
  iscsi enable

! iscsi import target fc

  iscsi virtual-target name vt
    pWWN 21:00:00:04:cf:4c:52:c1
  all-initiator-permit

--- 1,20 ----
  fcip enable

+ aaa accounting logsize 500
+
+
+

  ip default-gateway 172.22.91.1

  iscsi authentication none
  iscsi enable

! iscsi initiator name junk

  iscsi virtual-target name vt
    pWWN 21:00:00:04:cf:4c:52:c1
  all-initiator-permit
```

The following example displays running configuration information for a specified interface—in this case, the management interface.

```
switch# show running-config interface mgmt0

interface mgmt0

  ip address 255.255.255.0 255.255.255.0
```

The following example displays running configuration information for a specified feature—in this case, VSANS.

```
switch# show running-config feature vsan
vsan database
vsan 2 suspend
vsan 3
vsan 4

vsan database
vsan 3 interface fc1/1
```

show scsi-target

To display information about existing SCSI target configurations, use the **show scsi-target** command.

show scsi-target {**auto-poll** | **custom-list** | **devices** [**vsan** *vsan-id*] [**fcid** *fcid-id*] | **disk** [**vsan** *vsan-id*] [**fcid** *fcid-id*] | **lun [vsan** *vsan-id*] [**fcid** *fcid-id*] [**os** [**aix** | **all** | **hpux** | **linux** | **solaris** | **windows**] | **pwwn** | **status** | **tape** [**vsan** *vsan-id*] [**fcid** *fcid-id*]}

Syntax Description

auto-poll	Displays SCSI target auto polling information.
custom-list	Displays customized discovered targets.
devices	Displays discovered scsi-target devices information
disk	Displays discovered disk information.
lun	Displays discovered SCSI target LUN information.
os	Discovers the specified operating system.
aix	Specifies the AIX operating system.
all	Specifies all operating systems.
hpux	Specifies the HPUX operating system.
linux	Specifies the Linux operating system.
solaris	Specifies the Solaris operating system.
windows	Specifies the Windows operating system.
vsan *vsan-range*	Specifies the VSAN ID or VSAN range. The ID range is 1 to 4093.
fcid *fcid-id*	Specifies the FCID of the SCSI target to display.
status	Displays SCSI target discovery status.
tape	Displays discovered tape information.
pwwn	Displays discover pWWN information for each OS.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

Use the **show scsi-target auto-poll** command to verify automatic discovery of scsi-targets which come online.

Examples

The following example displays the status of a SCSI discovery.

```
switch# show scsi-target status
discovery completed
```

The following example displays a customized discovered targets:

```
switch# show scsi-target custom-list
---------------
VSAN DOMAIN
---------------
1       56
```

The following example displays discovered disk information.

```
switch# show scsi-target disk
--------------------------------------------------------------------------------
VSAN    FCID        PWWN                      VENDOR    MODEL             REV
--------------------------------------------------------------------------------
1       0x9c03d6    21:00:00:20:37:46:78:97   Company 4 ST318203FC        0004
1       0x9c03d9    21:00:00:20:37:5b:cf:b9   Company 4 ST318203FC        0004
1       0x9c03da    21:00:00:20:37:18:6f:90   Company 4 ST318203FC        0004
1       0x9c03dc    21:00:00:20:37:5a:5b:27   Company 4 ST318203FC        0004
1       0x9c03e0    21:00:00:20:37:36:0b:4d   Company 4 ST318203FC        0004
1       0x9c03e1    21:00:00:20:37:39:90:6a   Company 4 ST318203 CLAR18   3844
1       0x9c03e2    21:00:00:20:37:18:d2:45   Company 4 ST318203 CLAR18   3844
1       0x9c03e4    21:00:00:20:37:6b:d7:18   Company 4 ST318203 CLAR18   3844
1       0x9c03e8    21:00:00:20:37:38:a7:c1   Company 4 ST318203FC        0004
1       0x9c03ef    21:00:00:20:37:18:17:d2   Company 4 ST318203FC        0004
```

The following example displays the discovered LUNs for all OSs.

```
switch# show scsi-target lun os all

ST336607FC from SEAGATE (Rev 0006)
FCID is 0xed0001 in VSAN 7, PWWN is 21:00:00:04:cf:fb:42:f8
--------------------------------------------------------------------------------
OS  LUN    Capacity Status  Serial Number    Device-Id
           (MB)
--------------------------------------------------------------------------------
WIN 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
AIX 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
SOL 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
LIN 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
HP  0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
```

The following example displays the discovered LUNs. for the Solaris OS.

```
switch# show scsi-target lun os solaris

ST336607FC from SEAGATE (Rev 0006)
FCID is 0xed0001 in VSAN 7, PWWN is 21:00:00:04:cf:fb:42:f8
--------------------------------------------------------------------------------
OS  LUN    Capacity Status  Serial Number    Device-Id
           (MB)
--------------------------------------------------------------------------------
SOL 0x0    36704    Online  3JA1B9QA00007338 C:1 A:0 T:3 20:00:00:04:cf:fb:42:f8
```

The following example displays auto-polling information. Each user is indicated by the internal UUID number, which indicates that a CSM or an IPS module is in the chassis.

```
switch# show scsi-target auto-poll
auto-polling is enabled, poll_start:0 poll_count:1 poll_type:0
USERS OF AUTO POLLING
---------------------
uuid:54
```

The following example displays the port WWN that is assigned to each OS (Windows, AIX, Solaris, Linux, or HPUX).

```
switch# show scsi-target pwwn
------------------------------
OS      PWWN
------------------------------
WIN     24:91:00:05:30:00:2a:1e
AIX     24:92:00:05:30:00:2a:1e
SOL     24:93:00:05:30:00:2a:1e
LIN     24:94:00:05:30:00:2a:1e
HP      24:95:00:05:30:00:2a:1e
```

show snmp

To display the count information for all SNMP settings, use the **show snmp** command.

show snmp [**community** | **host** | **user**]

Syntax Description

community	Displays SNMP community strings.
host	Displays snmp hosts.
user	Displays SNMPv3 users.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays SNMP information.

```
switch# show snmp
sys contact:
sys location:

1631 SNMP packets input
        0 Bad SNMP versions
        0 Unknown community name
        0 Illegal operation for community name supplied
        0 Encoding errors
        64294 Number of requested variables
        1 Number of altered variables
        1628 Get-request PDUs
        0 Get-next PDUs
        1 Set-request PDUs
152725 SNMP packets output
        0 Too big errors
        1 No such name errors
        0 Bad values errors
        0 General errors

Community                     Access
---------                     ------
public                         rw

User                          Group                         Auth  Priv
____                          _____                         ____  _____
admin                         network-admin                 md5   no
```

The following example displays SNMP user details.

```
switch# show snmp user
User                           Group                          Auth  Priv
____                           _____                          ____  ____
steve                          network-admin                  md5   des
sadmin                         network-admin                  md5   des
stever                         network-operator               md5   des
```

The following example displays SNMP community information.

```
switch# show snmp community
Community                      Access
---------                      ------
private                         rw
public                          ro
v93RACqPNH                      ro
```

The following example displays SNMP host information.

```
switch# show snmp host
Host                            Port Version  Level  Type   SecName
____                            ____ _______  ______ ____  _______
171.16.126.34                   2162 v2c      noauth trap   public
171.16.75.106                   2162 v2c      noauth trap   public
171.31.124.81                   2162 v2c      noauth trap   public
171.31.157.193                  2162 v2c      noauth trap   public
171.31.157.98                   2162 v2c      noauth trap   public
171.31.49.25                    2162 v2c      noauth trap   public
171.31.49.32                    2188 v2c      noauth trap   public
171.31.49.49                    2162 v2c      noauth trap   public
171.31.49.49                    3514 v2c      noauth trap   public
171.31.49.54                    2162 v2c      noauth trap   public
171.31.58.54                    2162 v2c      noauth trap   public
171.31.58.81                    2162 v2c      noauth trap   public
171.31.58.97                    1635 v2c      noauth trap   public
171.31.58.97                    2162 v2c      auth   trap   public
171.31.58.97                    3545 v2c      auth   trap   public
172.22.00.43                    2162 v2c      noauth trap   public
172.22.00.65                    2162 v2c      noauth trap   public
172.22.05.234                   2162 v2c      noauth trap   public
172.22.05.98                    1050 v2c      noauth trap   public
```

show span session

To display specific information about a Switched Port Analyzer (SPAN) session, use the **show span session** command.

show span session [*session-id* [**brief**] | **brief**]

Syntax Description

session-id	SPAN session ID (1-16).
brief	Displays SPAN session configuration in brief format.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.2(1).

Usage Guidelines

None.

Examples

The following example displays SPAN sessions in a brief format.

```
switch# show span session brief
-------------------------------------------------------
 Session  Admin          Oper           Destination
          State          State          Interface
-------------------------------------------------------
 7        no suspend     active         fc2/7
```

The following example displays a specific SPAN session details.

```
switch# show span session 7
Session 7 (active)
   Destination is fc2/7
   No session filters configured
   No ingress (rx) sources
   Egress (tx) sources are
     port-channel 7,
```

The following example displays all SPAN sessions.

```
switch# show span session
Session 1 (inactive as no destination)
Destination is not specified
   Session filter vsans are 1
   No ingress (rx) sources
   No egress (tx) sources

Session 2 (active)
   Destination is fc9/5
   No session filters configured
   Ingress (rx) sources are
      vsans 1
     sup-fc0,
   Egress (tx) sources are
     sup-fc0,
```

The following example displays a SPAN session mapped to a FC tunnel interface.

```
switch# show span session
Session 2 (active)
   Destination is fc-tunnel 100
   No session filters configured
   Ingress (rx) sources are
     fc2/16,
   Egress (tx) sources are
     fc2/16,
```

show sprom

To display vendor ID, product component attributes, serial number information that can be used to track field replacable units, use the **show sprom** command.

show sprom {**backplane** *backplane-index* |
clock *clock-module-index* |
fan |
mgmt-module |
module *module-number sprom-index* |
powersupply *powersupply-index* |
sup}

Syntax Description

backplane *backplane-index*	Display attributes that can be used to uniquely identify a switch. The range is 1 to 2.
clock *clock-module-index*	Display attributes of the clock module. There are two clock modules in a switch. This module is absent in MDS9216 type switch. The range is 1 to 2.
fan	Display attributes that uniquely identified fan.
mgmt-module	Display attributes of management module. This module is only present in MDS9216 type switch.
module *module-number sprom-index*	Display Vendor ID, product's component attributes for the given switching module. There can be up to 4 sub-components in a module. Each of them will have a SPROM associated with it.
powersupply *powersupply-index*	Displays attributes of the first or the second power-supply. This contains information about the powersupply capacity in watts when it is used in 110Volts and 220Volts respectively. This information is used for power-budget allocation. The range is 1 to 2.
sup	Display Vendor ID, product's component attributes for the current supervisor module

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

Use the **show sprom** command to get unique information about a specific module, supervisor module, switch, power-supply module, or a fan module. If the customer needs to report a problem with a module, supervisor module, switch, power-supply module, or a fan module and does not have access to management station, then he can extract serial number information from **show sprom**.

Examples

The following example displays management module information. This module and command are specific to the Cisco MDS 9216 switch.

```
switch# show sprom mgmt-module
DISPLAY SAM sprom contents:
Common block:
 Block Signature :0xabab
 Block Version   :2
 Block Length    :156
 Block Checksum  :0x1295
 EEPROM Size     :0
 Block Count     :2
 FRU Major Type  :0x0
 FRU Minor Type  :0x0
 OEM String      :Cisco Systems Inc
 Product Number  :SAM SMITH
 Serial Number   :12345678901
 Part Number     :SAM-SMITH-06
 Part Revision   :A0
 Mfg Deviation   :
 H/W Version     :1.0
 Mfg Bits        :1
 Engineer Use    :0
 snmpOID         :0.0.0.0.0.0.0.0
 Power Consump   :-200
 RMA Code        :0-0-0-0
Linecard Module specific block:
 Block Signature :0x6003
 Block Version   :2
 Block Length    :103
 Block Checksum  :0x3c7
 Feature Bits    :0x0
 HW Changes Bits :0x0
 Card Index      :9009
 MAC Addresses   :00-12-34-56-78-90
 Number of MACs  :4
 Number of EOBC links :4
 Number of EPLD  :0
 Port Type-Num   :200-16
 SRAM size       :0
 Sensor #1       :0,0
 Sensor #2       :0,0
 Sensor #3       :0,0
 Sensor #4       :0,0
 Sensor #5       :0,0
 Sensor #6       :0,0
 Sensor #7       :0,0
 Sensor #8       :0,0
```

The following command displays supervisor module information.

```
switch# show sprom sup
DISPLAY supervisor sprom contents:
Common block:
 Block Signature : 0xabab
 Block Version   : 2
 Block Length    : 156
 Block Checksum  : 0x10a8
 EEPROM Size     : 512
 Block Count     : 2
 FRU Major Type  : 0x6002
 FRU Minor Type  : 0x7d0
 OEM String      : Cisco Systems
 Product Number  : DS-X9530-SF1-K9
```

```
 Serial Number   : abcdefgh
 Part Number     : 73-7523-06
 Part Revision   : 0.0
 Mfg Deviation   : 0.0
 H/W Version     : 0.0
 Mfg Bits        : 0
 Engineer Use    : 0
 snmpOID         : 9.5.1.3.1.1.2.2000
 Power Consump   : -524
 RMA Code        : 0-0-0-0
Supervisor Module specific block:
 Block Signature : 0x6002
 Block Version   : 2
 Block Length    : 103
 Block Checksum  : 0x927
 Feature Bits    : 0x0
 HW Changes Bits : 0x0
 Card Index      : 9003
 MAC Addresses   : 00-05-30-00-18-be
 Number of MACs  : 4
 Number of EPLD  : 1
 EPLD A          : 0x0
 Sensor #1       : 75,60
 Sensor #2       : 60,55
 Sensor #3       : -127,-127
 Sensor #4       : -127,-127
 Sensor #5       : -128,-128
 Sensor #6       : -128,-128
 Sensor #7       : -128,-128
 Sensor #8       : -128,-128
```

Related Commands

Command	Description
show hardware	Displays brief information about the list of field replacable units in the switch.

show ssh

To display Secure Shell information (SSH), use the **show ssh** command.

show ssh {**key** [**dsa** | **rsa** | **rsa1**] | **server**}

Syntax Description

key	Displays SSH keys.
server	Displays the SSH server status.
dsa	Displays DSA SSH keys.
rsa	Displays RSA SSH keys.
rsa1	Displays RSA1 SSH keys.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

To display the host key pair details for the specified key or for all keys, if no key is specified, use the **show ssh key** command. To display the status of the SSH protocol (enabled or disabled) and the versions that are enabled for that switch, use the **show ssh server** command .

Examples

The following example displays SSH server status.

```
switch# show ssh server
ssh is enabled
version 1 enabled
version 2 enabled
```

The following example displays Host Key Pair details.

```
switch# show ssh key
rsa1 Keys generated:Sun Jan 13 07:16:26 1980

1024 35

fingerprint:
1024 67:76:02:bd:3e:8d:f5:ad:59:5a:1e:c4:5e:44:03:07

could not retrieve rsa key information

dsa Keys generated:Sun Jan 13 07:40:08 1980

ssh-dss AAAAB3NzaC1kc3MAAABBAJTCRQOydNRel2v7uiO6Fix+OTn8eGdnnDVxw5eJs5OcOEXOyjaW
cMMYsEgxc9ada1NElp8Wy7GPMWGOQYj9CU0AAAAVAMCcWhNN18zFNOIPo7cU3t7d0iEbAAAAQBdQ8UAO
i/Cti84qFb3kTqXlS9mEhdQUo0lHcH5bw5PKfj2Y/dLR437zCBKXetPj4p7mhQ6Fq5os8RZtJEyOsNsA
AABAA0oxZbPyWeR5NHATXiyXdPI7j9i8fgyn9FNipMkOF2Mn75Mi/lqQ4NIq0gQNvQOx27uCeQlRts/Q
wI4q68/eaw==

fingerprint:
512 f7:cc:90:3d:f5:8a:a9:ca:48:76:9f:f8:6e:71:d4:ae
```

show startup-config

To display the startup configuration file, use the **show startup-config** command

show startup-config [**log**]

Syntax Description

log	Displays execution log of last used ASCII startup configuration.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the switch configuration at startup.

```
switch# show startup-config
vsan database
vsan 2
vsan 3
vsan 4
vsan 5
vsan 31
vsan 32 suspend
vsan 100
vsan 300

 interface port-channel 1
switchport mode E
switchport trunk mode off

 interface port-channel 2
fspf cost 100 vsan 2
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093

 interface port-channel 3
switchport mode E
switchport trunk mode off

 interface port-channel 4
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
```

```
 interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-10interface port-channel 5
switchport mode E
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-10

interface port-channel 8
switchport mode E

 interface vsan1

no shutdown

snmp-server community public rw
snmp-server user admin network-admin auth md5 0xe84b06201ae3bfb726a2eab9f485eb57
 localizedkey
snmp-server host 171.69.126.34 traps version 2c public udp-port 2162
snmp-server host 171.69.75.106 traps version 2c public udp-port 2162
vsan database
vsan 3 interface fc2/9
vsan 3 interface fc2/14
vsan 5 interface fc9/11
vsan 2 interface fc9/12
vsan 3 interface port-channel 3
vsan 3 interface port-channel 4
vsan 100 interface port-channel 8

boot system bootflash:/isan-8b-u sup-1
boot kickstart bootflash:/boot-3b sup-1
boot system bootflash:/isan-8b-u sup-2
boot kickstart bootflash:/boot-3b sup-2

ip default-gateway 172.22.90.1
power redundancy-mode combined force

username admin password 5 HyLyYqb4.q74Y  role network-admin
zone name Z1 vsan 1
  member pwwn 10:00:00:00:77:99:60:2c
  member pwwn 21:00:00:20:37:a6:be:14

zone default-zone permit vsan 1
zoneset distribute full vsan 51-58

zoneset name ZS1 vsan 1
  member Z1

zoneset  activate name ZS1 vsan 1

 interface fc2/1
switchport mode E
switchport trunk mode off
no shutdown

 interface fc2/2

 interface fc2/3
channel-group 1 force
no shutdown
```

```
interface fc2/6
channel-group 2 force
no shutdown

 interface fc2/7
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-25

interface fc2/9
switchport mode E
switchport trunk mode off
no shutdown

 interface fc2/10
channel-group 3 force
no shutdown

 interface fc2/12
channel-group 4 force
no shutdown

 interface fc2/14
switchport mode E
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093

 interface fc2/15
channel-group 6 force
no shutdown

 interface fc2/16
channel-group 6 force
no shutdown
.
.
.
interface fc9/10
switchport mode F
no shutdown

 interface fc9/11
switchport trunk mode off
no shutdown

 interface fc9/12
switchport mode E
switchport speed 1000
switchport trunk mode off
no shutdown

 interface fc9/15
no shutdown
no switchport trunk allowed vsan all
switchport trunk allowed vsan add 1-99
switchport trunk allowed vsan add 101-4093
```

```
 interface fc9/16
switchport mode FL
no shutdown

 interface mgmt0
ip address 172.22.90.38 255.255.255.0
no shutdown
```

show switchname

To display the switch network name, use the **show switchname** command.

show switchname [**serialnum**]

Syntax Description

serialnum	Displays switch serial number.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the name of the switch.

```
switch# show switchname
switch-123
```

The following example displays the switch name and serial number.

```
switch# show switchname
switch-123
Serial Number #1   : FOX0712S007
Serial Number #2   :
```

show system

To display the system information, use the **show system** command.

show system {**cores** | **default switchport** | **directory information** | **error-id** {*hex-id* | **list**} | **exception-info** | **pss shrink status** [**details**] | **redundancy status** | **reset-reason** [**module** *slot*] | **resources** | **uptime**}

Syntax Description

cores	Displays core transfer option.
default switchport	Displays system default values.
directory information	Directory information of System Manager.
error-id	Displays description about errors.
hex-id	Specifies the error ID in hexadecimal format. The range is 0x0 to 0xffffffff.
list	Specifies all error IDs.
exception-info	Displays last exception log information.
pss shrink status	Displays the last PSS shrink status.
details	Displays detailed information on the last PSS shrink status.
redundancy status	Redundancy status.
reset-reason	Displays the last four reset reason codes.
module *slot*	Specifies the module number to display the reset-reason codes.
resources	Show the CPU and memory statistics.
uptime	Displays how long the system has been up and running.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

Use the **show system redundancy status** command to ensure that the system is ready to accept a switchover.

Examples

The following example displays the system redundancy status.

```
switch# show system redundancy status
Redundancy mode
---------------
      administrative:   HA
         operational:   None

This supervisor (sup-2)
-----------------------
    Redundancy state:   Active
    Supervisor state:   Active
      Internal state:   Active with no standby

Other supervisor (sup-1)
------------------------
    Redundancy state:   Not present
```

The following example displays the default switch port states.

```
switch# show system default switchport
System default port state is down
System default trunk mode is on
```

The following example displays error information for a specified ID.

```
switch# show system error-id 0x401D0019
Error Facility: module
Error Description: Failed to stop Linecard Async Notification.
```

The following example displays the system health information.

```
switch# show system health
System Health Services iteration frequency 5 seconds
Active SUP arbiter is Working
Active SUP bootflash is Working
```

The following example displays the system reset information.

```
switch# show system reset reason
----- reset reason for module 6 -----
1) At 520267 usecs after Tue Aug  5 16:06:24 1980
    Reason: Reset Requested by CLI command reload
    Service:
    Version: 1.2(0.73a)
2) At 653268 usecs after Tue Aug  5 15:35:24 1980
    Reason: Reset Requested by CLI command reload
    Service:
    Version: 1.2(0.45c)
3) No time
    Reason: Unknown
    Service:
    Version: 1.2(0.45c)
4) At 415855 usecs after Sat Aug  2 22:42:43 1980
    Reason: Power down triggered due to major temperature alarm
    Service:
    Version: 1.2(0.45c)
```

The following example displays system-related CPU and memory statistics.

```
switch# show system resources
Load average:   1 minute: 0.43   5 minutes: 0.17   15 minutes: 0.11
Processes   :   100 total, 2 running
CPU states  :   0.0% user,   0.0% kernel,   100.0% idle
Memory usage:   1027628K total,    313424K used,    714204K free
                   3620K buffers,   22278K cache
```

The following example displays the system uptime.

```
switch# show system uptime
Start Time: Sun Oct 13 18:09:23 2030
Up Time:    0 days, 9 hours, 46 minutes, 26 seconds
```

Use the **show system cores** command to display the currently configured scheme for copying cores.

```
switch# show system cores
Transfer of cores is enabled
```

show system health

To display configured Online System Health Management (OSHM) information, use the **show system health** command.

show system health [module *slot* **| statistics** [**loopback** [**interface** {**fc** *slot*/*port*| **iscsi** *slot*/*port*} | **module** *slot* [**timelog**] | **timelog**] | **module** *slot*]

Syntax Description

module *slot*	Displays information for a module in the switch,
statistics	Displays OHMS statistics.
interface	Specifies the required interface.
fc *slot*/*port*	Specifies the Fiber Channel interface at the specified slot and port.
iscsi *slot*/*port*	Specifies the iSCSI interface at the specified slot and port.
loopback	Displays the OHMS loopback test statistics.
timelog	Displays the loopback round trip times.

Defaults

None

Command Modes

EXEC mode

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

None.

Examples

The following example displays the current health of all modules in the switch.

```
switch# show system health

Current health information for module 2.

Test                       Frequency    Status          Action
------------------------------------------------------------------
Bootflash                  5 Sec        Running         Enabled
EOBC                       5 Sec        Running         Enabled
Loopback                   5 Sec        Running         Enabled
------------------------------------------------------------------

Current health information for module 6.

Test                       Frequency    Status          Action
------------------------------------------------------------------
InBand                     5 Sec        Running         Enabled
Bootflash                  5 Sec        Running         Enabled
EOBC                       5 Sec        Running         Enabled
Management Port            5 Sec        Running         Enabled
------------------------------------------------------------------
```

The following example displays the current health of a specified module.

```
switch# show system health module 8

Current health information for module 8.

Test                       Frequency    Status          Action
------------------------------------------------------------------
Bootflash                  5 Sec        Running         Enabled
EOBC                       5 Sec        Running         Enabled
Loopback                   5 Sec        Running         Enabled
------------------------------------------------------------------
```

The following example displays the health statistics for all modules.

```
switch# show system health statistics

Test statistics for module # 1
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12900   12900       0     0    0
EOBC                Running             5s    12900   12900       0     0    0
Loopback            Running             5s    12900   12900       0     0    0
-------------------------------------------------------------------------------

Test statistics for module # 3
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12890   12890       0     0    0
EOBC                Running             5s    12890   12890       0     0    0
Loopback            Running             5s    12892   12892       0     0    0
-------------------------------------------------------------------------------

Test statistics for module # 5
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
InBand              Running             5s    12911   12911       0     0    0
Bootflash           Running             5s    12911   12911       0     0    0
EOBC                Running             5s    12911   12911       0     0    0
Management Port     Running             5s    12911   12911       0     0    0
-------------------------------------------------------------------------------

Test statistics for module # 6
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
InBand              Running             5s    12907   12907       0     0    0
Bootflash           Running             5s    12907   12907       0     0    0
EOBC                Running             5s    12907   12907       0     0    0
-------------------------------------------------------------------------------

Test statistics for module # 8
-------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
-------------------------------------------------------------------------------
Bootflash           Running             5s    12895   12895       0     0    0
EOBC                Running             5s    12895   12895       0     0    0
Loopback            Running             5s    12896   12896       0     0    0
-------------------------------------------------------------------------------
```

The following example displays the statistics for a specified module.

```
switch# show system health statistics module 3

Test statistics for module # 3
--------------------------------------------------------------------------------
Test Name           State            Freq(s)    Run    Pass    Fail CFail Errs
--------------------------------------------------------------------------------
Bootflash           Running              5s    12932   12932       0     0    0
EOBC                Running              5s    12932   12932       0     0    0
Loopback            Running              5s    12934   12934       0     0    0
--------------------------------------------------------------------------------
```

The following example displays the loopback test statistics for the entire switch.

```
switch# show system health statistics loopback
-------------------------------------------------------------------
Mod Port Status                Run     Pass     Fail   CFail Errs
  1   16 Running              12953    12953        0       0    0
  3   32 Running              12945    12945        0       0    0
  8    8 Running              12949    12949        0       0    0
-------------------------------------------------------------------
```

The following example displays the loopback test statistics for a specified interface.

```
switch# show system health statistics loopback interface fc 3/1
-------------------------------------------------------------------
Mod Port Status                Run     Pass     Fail   CFail Errs
  3    1 Running                  0        0        0       0    0
-------------------------------------------------------------------
```

Note Interface-specific counters will remain at zero unless the module-specific loopback test reports errors or failures.

The following example displays the loopback test time log for all modules.

```
switch# show system health statistics loopback timelog
-------------------------------------------------------------------
Mod         Samples     Min(usecs)     Max(usecs)     Ave(usecs)
  1            1872            149            364            222
  3            1862            415            743            549
  8            1865            134            455            349
-------------------------------------------------------------------
```

The following example displays the loopback test statistics for a specified module.

```
switch# show system health statistics loopback module 8 timelog
-------------------------------------------------------------------
Mod         Samples     Min(usecs)     Max(usecs)     Ave(usecs)
  8            1867            134            455            349
-------------------------------------------------------------------
```

show tacacs-server

To display configured TACACS+ servers and groups information, use the **show tacacs-server** command.

show tacacs-server [**groups** | **sorted**]

Syntax Description

groups	Displays configured TACACS+ server group information.
sorted	Displays TACACS+ server information sorted by name.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.3(1).

Usage Guidelines

None.

Examples

The following command displays the configured TACACS+ server information.

```
switch# show tacacs-server
Global TACACS+ shared secret:tacacsPword
timeout value:30
total number of servers:3

following TACACS+ servers are configured:
        171.71.58.91:
                available on port:2
        cisco.com:
                available on port:49
        171.71.22.95:
                available on port:49
                TACACS+ shared secret:MyKey
```

The following command displays the configured TACACS+ server groups.

```
switch# show tacacs-server groups
total number of groups:1

following TACACS+ server groups are configured:
        group TacServer:
                server 171.71.58.91 on port 2
```

show tech-support

To display information useful to technical support when reporting a problem, use the **show tech-support** command.

show tech-support [**brief** | **details** | **interface** {**fc** *slot/port* | **gigabitethernet** *slot/port*} **vsan** *vsan-id* | **module** *slot* | **vsan** *vsan-id*]

Syntax Description

brief	Provides a summary of the current running state of the switch.
details	Provides detailed information for each **show** command
interface	Display interface status and configuration information
fc *slot/port*	Specifies the Fiber Channel interface at the specified slot and port.
gigabitethernet *slot/port*	Specifies the Gigabit Ethernet interface at the specified slot and port.
module	Display module status information
vsan *vsan-id*	Display VSAN status and configuration information. The range is 1 to 4093.

Defaults

The default displays output on a per-command basis, with each command being the title of the output that follows. A line separates the output from the next command. The software removes passwords and other security information.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

The **show tech-support** command is a compilation of several **show** commands and can be quite lengthy. For a sample display of the output of the **show tech-support** command, see the individual command explanation for the following commands.

If you enter the **show tech-support** command without arguments, the output displays the equivalent of all the following **show** commands.

- **show version**
- **show environment**
- **show module**
- **show hardware**
- **show running-config**
- **show interface**
- **show accounting log**
- **show process**
- **show process log**

- **show processes log details**

Examples

The following example displays technical support information for a specific module.

```
switch# show tech-support module 1

'terminal length 0'

'show module '
Mod  Ports  Module-Type                       Model              Status
---  -----  --------------------------------- ------------------ ------------
1    16     1/2 Gbps FC/Supervisor            DS-X9216-K9-SUP    active *
2    32     1/2 Gbps FC Module                DS-X9032           ok

Mod  Sw           Hw      World-Wide-Name(s) (WWN)
---  -----------  ------  --------------------------------------------------
1    1.0(0.271)   0.0     20:01:00:05:30:00:21:9e to 20:10:00:05:30:00:21:9e
2    1.0(0.271)   0.0     20:41:00:05:30:00:21:9e to 20:60:00:05:30:00:21:9e

Mod  MAC-Address(es)                         Serial-Num
---  --------------------------------------  ----------
1    00-05-30-00-40-b6 to 00-05-30-00-40-ba
2    00-05-30-00-11-22 to 00-05-30-00-11-26

* this terminal session

'show environment'
Clock:
----------------------------------------------------------
Clock           Model                Hw         Status
----------------------------------------------------------
A               Clock Module         --         ok/active
B               Clock Module         --         ok/standby

Fan:
-----------------------------------------------------
Fan             Model                Hw         Status
-----------------------------------------------------
Chassis         DS-2SLOT-FAN         0.0        ok
PS-1            --                   --         ok
PS-2            --                   --         absent

Temperature:
------------------------------------------------------------------
Module   Sensor   MajorThresh   MinorThres   CurTemp     Status
                  (Celsius)     (Celsius)    (Celsius)
------------------------------------------------------------------
1        1        75           60           30          ok
1        2        65           50           28          ok
1        3        -127         -127         40          ok
1        4        -127         -127         36          ok

2        1        75           60           32          ok
2        2        65           50           26          ok
2        3        -127         -127         41          ok
2        4        -127         -127         31          ok
```

The **show tech-support brief** command provides a summary of the current running state of the switch.

```
vegas01# show tech-support brief
Switch Name           : vegas01
Switch Type           : DS-X9216-K9-SUP
Kickstart Image       : 1.3(2a) bootflash:///m9200-ek9-kickstart-mz.1.3.1.10.bin
System Image          : 1.3(2a) bootflash:///m9200-ek9-mz.1.3.1.10.bin
IP Address/Mask       : 10.76.100.164/24
Switch WWN            : 20:00:00:05:30:00:84:9e
No of VSANs           : 9
Configured VSANs      : 1-6,4091-4093

VSAN    1:    name:VSAN0001, state:active, interop mode:default
              domain id:0x6d(109), WWN:20:01:00:05:30:00:84:9f [Principal]
              active-zone:VR, default-zone:deny

VSAN    2:    name:VSAN0002, state:active, interop mode:default
              domain id:0x7d(125), WWN:20:02:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN    3:    name:VSAN0003, state:active, interop mode:default
              domain id:0xbe(190), WWN:20:03:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN    4:    name:VSAN0004, state:active, interop mode:default
              domain id:0x5a(90), WWN:20:04:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN    5:    name:VSAN0005, state:active, interop mode:default
              domain id:0x13(19), WWN:20:05:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN    6:    name:VSAN0006, state:active, interop mode:default
              domain id:0x1f(31), WWN:20:06:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN 4091:    name:VSAN4091, state:active, interop mode:default
              domain id:0x08(8), WWN:2f:fb:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN 4092:    name:VSAN4092, state:active, interop mode:default
              domain id:0x78(120), WWN:2f:fc:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny

VSAN 4093:    name:VSAN4093, state:active, interop mode:default
              domain id:0x77(119), WWN:2f:fd:00:05:30:00:84:9f [Principal]
              active-zone:<NONE>, default-zone:deny


--------------------------------------------------------------------------------
Interface  Vsan   Admin  Admin   Status          FCOT   Oper  Oper   Port
                  Mode   Trunk                         Mode  Speed  Channel
                         Mode                                (Gbps)
--------------------------------------------------------------------------------
fc1/1      1      auto   on      fcotAbsent       --     --           --
fc1/2      1      auto   on      fcotAbsent       --     --           --
fc1/3      1      auto   on      fcotAbsent       --     --           --
fc1/4      1      auto   on      fcotAbsent       --     --           --
fc1/5      1      auto   on      notConnected     swl    --           --
fc1/6      1      auto   on      fcotAbsent       --     --           --
fc1/7      1      auto   on      fcotAbsent       --     --           --
fc1/8      1      auto   on      fcotAbsent       --     --           --
fc1/9      1      auto   on      fcotAbsent       --     --           --
fc1/10     1      auto   on      fcotAbsent       --     --           --
```

```
fc1/11     1      auto   on      fcotAbsent       --     --           --
fc1/12     1      auto   on      fcotAbsent       --     --           --
fc1/13     1      auto   on      fcotAbsent       --     --           --
fc1/14     1      auto   on      fcotAbsent       --     --           --
fc1/15     1      auto   on      fcotAbsent       --     --           --
fc1/16     1      auto   on      fcotAbsent       --     --           --

--------------------------------------------------------------------------------
Interface          Status                             Speed
                                                      (Gbps)
--------------------------------------------------------------------------------
sup-fc0            up                                 1

--------------------------------------------------------------------------------
Interface               Status     IP Address        Speed        MTU
--------------------------------------------------------------------------------
mgmt0                   up         10.76.100.164/24  100 Mbps     1500


Power Supply:
------------------------------------------------------
PS  Model                Power     Power       Status
                         (Watts)   (Amp @42V)
------------------------------------------------------
1   WS-CAC-950W          919.38    21.89       ok
2                        --        --          absent


Mod Model                Power     Power       Power     Power       Status
                         Requested Requested   Allocated Allocated
                         (Watts)   (Amp @42V)  (Watts)   (Amp @42V)
--- -------------------  -------   ----------  --------- ----------  ----------
1    DS-X9216-K9-SUP     220.08    5.24        220.08    5.24        powered-up
2    DS-X9032            199.92    4.76        199.92    4.76        powered-up

Power Usage Summary:
--------------------
Power Supply redundancy mode:                  redundant

Total Power Capacity                           919.38   W

Power reserved for Supervisor(s)[-]            220.08   W
Power reserved for Fan Module(s)[-]            47.88    W
Power currently used by Modules[-]             199.92   W

                                               -------
Total Power Available                          451.50
```

show telnet server

To display the state of the Telnet access configuration, use the **show telnet server** command.

show telnet server

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the status of the Telnet server.

```
switch# show telnet server
telnet service enabled
```

show terminal

To display the terminal information, use the **show terminal** command

show terminal

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays terminal information.

```
switch# show terminal
TTY:  Type: "vt100"
Length: 25 lines, Width: 80 columns
Session Timeout: 30 minutes
```

show tlport

To display configured TL port information, use the **show tlport** command

show tlport { alpa-cache | discapp fcid *fcid-id* [**vsan** *vsan-id*] [**verbose**] **| interface fc** *slot*/*port* {**all | private | proxied | topology | unsupported**} **| list** [**vsan** *vsan-id*]**}**

Syntax Description

alpa-cache	Displays the contents of the ALPA cache.
discapp	Displays private N port parameters.
fcid *fcid-id*	Specifies the FCID of the N port.
verbose	Specifies the verbose mode.
vsan *vsan-id*	Specifies the N port VSAN ID. The range is 1 to 4093.
interface	Displays TL ports in the selected interface.
fc *slot*/*port*	Specifies the Fiber Channel interface at the specified slot and port.
all	Displays all proxied & private devices on this TL Port.
private	Displays all private devices on this TL Port.
proxied	Displays all proxied devices on this TL Port.
topology	Displays loop topology for this TL Port.
unsupported	Displays all unsupported devices on this TL Port.
list	Displays TL ports in all VSANs.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

The **show tlport** command displays the TL port interface configurations. This command provides a list of all TL ports configured on a box and displays the associated VSAN, the FC ID for the port (only domain and area are valid), and the current operational state of the TL port (up or initializing).

Examples

The following example displays the TL ports in all VSANs.

```
switch# show tlport list
-------------------------------
Interface Vsan FC-ID    State
------------------------ ------
fc1/16    1    0x420000 Init
fc2/26    1    0x150000 Up
```

The following example displays the detailed information for a specific TL port.

```
switch# show tlport interface fc1/16 all
fc1/16 is up, vsan 1, FCID 0x420000
-------------------------------------------------------------------------------
alpa pWWN                   nWWN                   SCSI Type Device  FC-ID
-------------------------------------------------------------------------------
0x01 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Proxied 0xfffc42
0x73 22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    Private 0x420073
0xef 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator Switch  0x0000ef
```

The following example displays TL port information for private devices.

```
switch# show tlport int fc1/16 pri
fc1/16 is up, vsan 1, FCID 0x420000
-------------------------------------------------------------------------
alpa pWWN                   nWWN                   SCSI Type FC-ID
-------------------------------------------------------------------------
0x73 22:00:00:20:37:39:ae:54 20:00:00:20:37:39:ae:54 Target    0x420073
0x74 22:00:00:20:37:38:d3:de 20:00:00:20:37:38:d3:de Target    0x420074
```

The following example displays TL port information for proxied devices.

```
switch# show tlport int fc1/16 prox
fc1/16 is up, vsan 1, FCID 0x420000
-------------------------------------------------------------------------
alpa pWWN                   nWWN                   SCSI Type FC-ID
-------------------------------------------------------------------------
0x01 20:10:00:05:30:00:4a:de 20:00:00:05:30:00:4a:de Initiator 0xfffc42
0x02 21:00:00:e0:8b:01:95:e7 20:00:00:e0:8b:01:95:e7 Initiator 0x420100
```

The following example displays the contents of the alpa-cache.

```
switch# show tlport alpa-cache
-----------------------------------------------------
alpa              pWWN               Interface
-----------------------------------------------------
0x02  22:00:00:20:37:46:09:bd     fc1/2
0x04  23:00:00:20:37:46:09:bd     fc1/2
```

show trunk protocol

To display trunk protocol status, use the **show trunk protocol** command.

show trunk protocol

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays trunk protocol status.

```
switch# show trunk protocol
Trunk protocol is enabled
```

show user-account

To display configured information about user accounts, use the **show user-account** command.

show user-account [*user-name* | **iscsi**]

Syntax Description

user-name	Displays the user account information for the specified user name.
iscsi	Displays the iSCSI user account information.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays information for a specified user.

```
switch# show user-account user1
user:user1
        this user account has no expiry date
        roles:network-operator
no password set. Local login not allowed
Remote login through RADIUS is possible
```

The following example displays information for all users.

```
switch# show user-account
show user-account
user:admin
        this user account has no expiry date
        roles:network-admin

user:usam
        expires on Sat May 31 00:00:00 2003
        roles:network-admin network-operator

user:msam
        this user account has no expiry date
        roles:network-operator

user:user1
        this user account has no expiry date
        roles:network-operator
no password set. local login not allowed
Remote login through RADIUS is possible
```

show users

To display all users currently accessing the switch, use the **show users** command.

show users

Syntax Description

This command has no arguments or keywords.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays all users.

```
switch# show users
admin    pts/7        Jan 12 20:56 (10.77.202.149)
admin    pts/9        Jan 12 23:29 (modena.cisco.com)
admin    pts/10       Jan 13 03:05 (dhcp-171-71-58-120.cisco.com)
admin    pts/11       Jan 13 01:53 (dhcp-171-71-49-49.cisco.com)
```

show version

To display the version of system software that is currently running on the switch, use the **show version** command.

show version [**epld** *url* | **image** {**bootflash:** | **slot0:** | **volatile:**}*image-filename* | **module** *slot* [**epld**]]

Syntax Description

epld *url*	Displays all EPLD versions that are available at the specified URL (bootflash:, ftp:, scp:, sftp:, slot0:, tftp:, or volatile:)
image	Displays the software version of a given image.
bootflash:	Specifies internal bootflash memory.
slot0:	Specifies CompactFlash memory or PCMCIA card.
volatile:	Specifies the volatile directory.
image-filename	Specifies the name of the system or kickstart image.
module *slot*	Displays the software version of a module in the specified slot.
epld	Displays all current versions of EPLDs on a specified module.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2) and modified in Release 1.0(3).

Usage Guidelines

Use the **show version image** command to verify the integrity of the image before loading the images. This command can be used for both the system and kickstart images.

Use the **show version** command to verify the version on the active and standby supervisor modules before and after an upgrade.

Examples

The following examples display the versions of the system, kickstart, and failed images.

```
switch(boot)# show version image bootflash:system_image <------------system image
 image name: m9500-sf1ek9-mz.1.0.3.bin
 system:     version 1.0(3)
 compiled:   10/25/2010 12:00:00

switch(boot)# show version image bootflash:kickstart_image <-------------kickstart image
  image name: m9500-sf1ek9-kickstart-mz.1.0.3.upg.bin
  kickstart:  version 1.0(3)
  loader:     version 1.0(3)
  compiled:   10/25/2010 12:00:00
```

```
switch# show version image bootflash:bad_image <--------------failure case
Md5 Verification Failed
Image integrity check failed
```

The following example displays current EPLD versions for a specified module.

```
switch# show version module 2 epld
Module Number                       2
EPLD Device                   Version
------------------------------------
Power Manager                    0x06
XBUS IO                          0x07
UD chip Fix                      0x05
Sahara                           0x05
```

The following example displays available EPLD versions.

```
switch# show version epld scp://user@10.6.16.22/users/dino/epld.img
user@10.6.16.22's password:

Module Name                     EPLD Device         Version
------------------------------------------------------------
Supervisor/Fabric-1             XBUS 1 IO              0x09
                                XBUS 2 IO              0x0c
                                UD chip Fix            0x05
                                Sahara                 0x04
1/2 Gbps FC 16 port             XBUS IO                0x08
                                Sahara                 0x05
1/2 Gbps FC 32 port             XBUS IO                0x07
                                Sahara                 0x05
Virtualization Linecard         XBUS IO                0x07
                                UD chip Fix            0x05
                                Golden Gate            0x04
IP Storage Module               XBUS IO                0x02
                                UD chip Fix            0x05
                                Sahara                 0x05
                                Mainboard Bally        0x12
                                Daughter card Bally    0x08
20/40 Port FC Fabric Switch     XBUS IO                0x03
```

The following example displays the entire output for the show version command.

```
switch# show version
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003, Cisco Systems, Inc. All rights reserved.
The copyrights to certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license. Some parts of this software are covered
under the GNU Public License. A copy of the license is available
at http://www.gnu.org/licenses/gpl.html.

Software
  BIOS:      version 1.0.8
  loader:    version 1.1(2)
  kickstart: version 2.0(1) [build 2.0(0.6)] [gdb]
  system:    version 2.0(1) [build 2.0(0.6)] [gdb]

  BIOS compile time:       08/07/03
  kickstart image file is: bootflash:///m9500-sf1ek9-kickstart-mzg.2.0.0.6.bin
  kickstart compile time:  10/25/2010 12:00:00
  system image file is:    bootflash:///m9500-sf1ek9-mzg.2.0.0.6.bin
  system compile time:     10/25/2020 12:00:00
```

```
Hardware
  RAM 1024584 kB

  bootflash: 1000944 blocks (block size 512b)
  slot0:           0 blocks (block size 512b)

  172.22.92.181 uptime is 0 days 2 hours 18 minute(s) 1 second(s)

  Last reset at 970069 usecs after Tue Sep 16 22:31:25 1980
    Reason: Reset Requested by CLI command reload
    System version: 2.0(0.6)
    Service:
```

The following examples displays a before and after comparison scenario after the loader version is updated.

```
switch# show version
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
Software
  BIOS:      version 1.0(3)
  loader:    version 1.0(2) <----------existing version
  kickstart: version 1.0(3)
  system:    version 1.0(3)
  BIOS compile time:       11/18/02
  kickstart image file is: bootflash:/kickstart_image
  kickstart compile time:  1/20/2003 12:00:00
  system image file is:    bootflash:/system_image
  system compile time:     1/20/2003 12:00:00

switch# show version
Cisco Storage Area Networking Operating System (SAN-OS) Software
TAC support: http://www.cisco.com/tac
Copyright (c) 2002-2003 by Cisco Systems, Inc. All rights reserved.
The copyright for certain works contained herein are owned by
Andiamo Systems, Inc. and/or other third parties and are used and
distributed under license.
Software
  BIOS:      version 1.0(3)
  loader:    version 1.0(3) <----------new version
.....
```

The following example displays the version details for a specified module.

```
switch# show ver mod 4
Mod No   Mod Type       SW Version           SW Interim Version
4        LC             1.0(3)               1.0(3)
```

show vrrp

To display the VRRP configuration information, use the **show vrrp** command.

show vrrp [**statistics** | **vr** *group* [**interface** *type*]]

Syntax Description

statistics	Displays cumulative vrrp statistics for this machine.
vr	Displays virtual router information.
group	Specifies the group ID. The range is 1 to 255.
interface *type*	Enter **mgmt 0** for management interface, or VSAN for the IPFC VSAN interface.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays VRRP configured information.

```
switch# show vrrp vr 7 interface vsan 2 configuration
vr id 7 configuration
admin state down
priority 100
no authentication
advertisement-Interval 1
preempt yes
tracking interface vsan1 priority 2
protocol IP
```

The following example displays VRRP status information.

```
switch# show vrrp vr 7 interface vsan 2 status
vr id 7 status
MAC address 00:00:5e:00:01:07
Operational state: init
```

The following example displays VRRP statistics.

```
switch# show vrrp vr 7 interface vsan 2 statistics
vr id 7 statistics
Become master 0
Advertisement 0
Advertisement Interval Error 0
Authentication Failure 0
TTL Error 0
Priority 0 Received 0
Priority 0 Sent 0
Invalid Type 0
Mismatch Address List 0
Invalid Authentication Type 0
Mismatch Authentication 0
Invalid Packet Length 0
```

The following example displays VRRP cumulative statistics.

```
switch# show vrrp statistics
Invalid checksum 0
Invalid version 0
Invalid VR ID 0
```

show vsan

To display information about configured VSAN, use the **show vsan** command.

show vsan [*vsan-id* [**membership**] | **membership interface** {**fc** *slot/port* | **fcip** *fcip-id* | **fv** *slot/dpp-number/fv-port* | **iscsi** *slot/port* | **portchannel** *portchannel-number.subinterface-number*}] | **usage**]

Syntax Description

vsan *vsan-id*	Displays information for the specified VSAN ID. The range is 1 to 4093.
membership	Displays membership information.
interface	Specifies the interface type.
fc *slot/port*	Specifies a Fibre Channel interface by the slot and port.
fcip *fcip-id*	Specifies a FC IP interface ID. The range is 1 to 255.
fv *slot/dpp-number/fv-port*	Specifies a virtual F port (FV port) interface in the specified slot along with the data path processor (DPP) number and the FV port number.
port-channel *portchannel-number.subinterface-number*	Specifes a PortChannel interface specified by the PortChannel number followed by a dot (.) indicator and the subinterface number.
usage	Displays VSAN usage in the system.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines

For the **show vsan membership interface** command, interface information is not displayed if interfaces are not configured on this VSAN.

The interface range must be in ascending order and non-overlapping. You can specify a range using a hyphen and several interfaces using commas:

- The interface range format for a FC interface range is fc*slot/port - port* , fc*slot/port* , fc*slot/port*
  (For example, `show int fc1/1 - 3 , fc1/5 , fc2/5`)
- The interface range format for a FV interface range is fv*slot/dpp/fvport - fvport* , fv*slot/dpp/port* , fv*slot/dpp/port*
  (For example, `show int fv2/1/1 - 3 , fv2/1/5 , fv2/2/5`)
- The format for a PortChannel is port-channel *portchannel-number. subinterface-number*
  (For example, **show int port-channel** *portchannel-number. subinterface-number)*

Examples

The following examples displays configured VSAN information.

```
switch# show vsan 1
vsan 1 information
         name:VSAN0001  state:active
         interoperability mode:yes ß verify mode
         loadbalancing:src-id/dst-id/oxid
         operational state:up

switch# show vsan usage
4 vsan configured
configured vsans:1-4
vsans available for configuration:5-4093

switch # show vsan 1 membership
vsan 1 interfaces:
        fc1/1   fc1/2   fc1/3   fc1/4   fc1/5   fc1/6   fc1/7   fc1/9
        fc1/10  fc1/11  fc1/12  fc1/13  fc1/14  fc1/15  fc1/16  port-channel 99
```

The following example displays membership information for all VSANs.

```
switch # show vsan membership
vsan 1 interfaces:
        fc2/16  fc2/15  fc2/14  fc2/13  fc2/12  fc2/11  fc2/10  fc2/9
        fc2/8   fc2/7   fc2/6   fc2/5   fc2/4   fc2/3   fc2/2   fc2/1
        fc1/16  fc1/15  fc1/14  fc1/13  fc1/12  fc1/11  fc1/10  fc1/9
        fc1/7   fc1/6   fc1/5   fc1/4   fc1/3   fc1/2   fc1/1
vsan 2 interfaces:
vsan 7 interfaces:
        fc1/8
vsan 100 interfaces:
vsan 4094(isolated vsan) interfaces:
```

The following example displays membership information for a specified interface.

```
switch # show vsan membership interface fc1/1
fc1/1
        vsan:1
        allowed list:1-4093

switch# show vsan
vsan 1 information
         name:VSAN0001  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 2 information
         name:VmVSAN  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 3 information
         name:Disk_A  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up

vsan 4 information
         name:Host_B  state:active
         interoperability mode:default
         loadbalancing:src-id/dst-id/oxid
         operational state:up
```

```
vsan 4094:isolated_vsan

switch# show vsan membership interface fv 2/1/3 , fv2/1/5 - 7
fv2/1/3
        vsan:2
        allowed list:1-4093
fv2/1/5
        vsan:3
        allowed list:1-4093
fv2/1/6
        vsan:4
        allowed list:1-4093
fv2/1/7
        vsan:4
        allowed list:1-409
```

show wwn

To display the status of the WWN configuration, use the **show wwn** commands.

show wwn {**status block-id** *number* | **switch**}

Syntax Description

status block-id *number*	Displays WWN usage and alarm status for a block ID. The range is 34 to 1793.
switch	Displays switch WWN.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was introduced in Cisco MDS SAN-OS Release 1.0(2).

Usage Guidelines

None.

Examples

The following example displays the WWN of the switch.

```
switch# show wwn switch
Switch WWN is 20:01:ac:16:5e:52:00:01
```

show zone

To display zone information, use the **show zone** command.

show zone
[**active** [**vsan** *vsan-id*] |
ess [**vsan** *vsan-id*] |
member {**fcalias** *alias-name* | **fcid** *fcid-id* [**lun** *lun-id*] | **pwwn** *wwn* [**lun** *lun-id*]} [**active** | **vsan** *vsan-id*] |
name *string* [**active**] [**vsan** *vsan-id*] |
statistics [**lun-zoning** [**vsan** *vsan-id*] | **read-only-zoning** [**vsan** *vsan-id*] | **vsan** *vsan-id*] |
status [**vsan** *vsan-id-range*]
vsan [**vsan** *vsan-id*]]

Syntax Description

active	Displays zones which are part of active zoneset.
ess	Displays ESS information.
member	Displays all zones in which the given member is part of.
name	Displays members of a specified zone.
statistics	Displays zone server statistics.
status	Displays zone server current status.
vsan *vsan-id*	Displays zones belonging to the specified VSAN ID. The range is 1 to 4093.
lun *lun-id*	Specifies a LUN ID.
lun-zoning	Displays LUN zoning related statistics
read-only-zoning	Displays read-only zoning related statistics

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.3(4).

Usage Guidelines

None.

Examples

The following example displays configured zone information.

```
switch# show zone
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 2
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
  fwwn 20:43:00:05:30:00:2a:1e
```

```
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
zone name Techdocs vsan 3
  ip-address 10.15.0.0 255.255.255.0
```

The following example displays zone information for a specific VSAN.

```
switch# show zone vsan 1
zone name Zone3 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:9c:48:e5
zone name Zone2 vsan 1
  fwwn 20:41:00:05:30:00:2a:1e
  fwwn 20:42:00:05:30:00:2a:1e
  fwwn 20:43:00:05:30:00:2a:1e
  fwwn 20:44:00:05:30:00:2a:1e
  fwwn 20:45:00:05:30:00:2a:1e
  fwwn 20:46:00:05:30:00:2a:1e
  fwwn 20:47:00:05:30:00:2a:1e
  fwwn 20:48:00:05:30:00:2a:1e
  fwwn 20:49:00:05:30:00:2a:1e
  fwwn 20:4a:00:05:30:00:2a:1e
  fwwn 20:4b:00:05:30:00:2a:1e
  fwwn 20:4c:00:05:30:00:2a:1e
  fwwn 20:4d:00:05:30:00:2a:1e
  fwwn 20:4e:00:05:30:00:2a:1e
  fwwn 20:4f:00:05:30:00:2a:1e
  fwwn 20:50:00:05:30:00:2a:1e
  fwwn 20:51:00:05:30:00:2a:1e
  fwwn 20:52:00:05:30:00:2a:1e
  fwwn 20:53:00:05:30:00:2a:1e
  fwwn 20:54:00:05:30:00:2a:1e
  fwwn 20:55:00:05:30:00:2a:1e
  fwwn 20:56:00:05:30:00:2a:1e
  fwwn 20:57:00:05:30:00:2a:1e
  fwwn 20:58:00:05:30:00:2a:1e
  fwwn 20:59:00:05:30:00:2a:1e
  fwwn 20:5a:00:05:30:00:2a:1e
  fwwn 20:5b:00:05:30:00:2a:1e
  fwwn 20:5c:00:05:30:00:2a:1e
  fwwn 20:5d:00:05:30:00:2a:1e
  fwwn 20:5e:00:05:30:00:2a:1e
  fwwn 20:5f:00:05:30:00:2a:1e
  fwwn 20:60:00:05:30:00:2a:1e
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

The following example displays members of a specific zone.

```
switch# show zone name Zone1
zone name Zone1 vsan 1
  pwwn 21:00:00:20:37:6f:db:dd
  pwwn 21:00:00:20:37:a6:be:2f
  pwwn 21:00:00:20:37:9c:48:e5
  fcalias Alias1
```

The following example displays all zones to which a member belongs using the FC ID.

```
switch# show zone member pwwn 21:00:00:20:37:9c:48:e5
          VSAN: 1
zone Zone3
zone Zone1
fcalias Alias1
```

The following example displays the number of control frames exchanged with other switches.

```
switch# show zone statistics
Statistics For VSAN: 1
********************************
Number of Merge Requests Sent: 24
Number of Merge Requests Recvd: 25
Number of Merge Accepts Sent: 25
Number of Merge Accepts Recvd: 25
Number of Merge Rejects Sent: 0
Number of Merge Rejects Recvd: 0
Number of Change Requests Sent: 0
Number of Change Requests Recvd: 0
Number of Change Rejects Sent: 0
Number of Change Rejects Recvd: 0
Number of GS Requests Recvd: 0
Number of GS Requests Rejected: 0
Statistics For VSAN: 2
********************************
Number of Merge Requests Sent: 4
...
Number of GS Requests Rejected: 0
```

The following example displays LUN-zoning details.

```
switch# show zone statistics lun-zoning
LUN zoning statistics for VSAN: 1
************************************************************
S-ID: 0x123456, D-ID: 0x22222, LUN: 00:00:00:00:00:00:00:00
------------------------------------------------------------
Number of Inquiry commands received:         10
Number of Inquiry data No LU sent:            5
Number of Report LUNs commands received:     10
Number of Request Sense commands received:    1
Number of Other commands received:            0
Number of Illegal Request Check Condition sent: 0

S-ID: 0x123456, D-ID: 0x22222, LUN: 00:00:00:00:00:00:00:01
------------------------------------------------------------
Number of Inquiry commands received:          1
Number of Inquiry data No LU sent:            1
Number of Request Sense commands received:    1
Number of Other commands received:            0
Number of Illegal Request Check Condition sent:  0
```

The following example displays read-only zone details.

```
switch# show zone statistics read-only-zoning
Read-only zoning statistics for VSAN: 2
************************************************************
S-ID: 0x33333, D-ID: 0x11111, LUN: 00:00:00:00:00:00:00:64
------------------------------------------------------------
Number of Data Protect Check Condition Sent:  12
```

The following example displays the status of configured zones.

```
switch# show zone status
VSAN: 1 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Database Not Available
Status:
...
VSAN: 9 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Database Not Available
Status:
```

The following example checks the status of the **zoneset distribute vsan** command.

```
switch# show zone status vsan 2
VSAN: 3 default-zone: permit distribute: active only Interop: 100
Full Zoning Database :
    Zonesets:0  Zones:0 Aliases: 0
Active Zoning Database :
    Name: nozoneset  Zonesets:1  Zones:2
Status: Zoneset distribution completed at 04:01:06 Aug 28 1980
```

show zoneset

To display the configured zone sets, use the **show zoneset** command .

show zoneset [**name** *zoneset-name*] [**brief**] [**active**] [**vsan** *vsan-id*]

Syntax Description

name *zoneset-name*	Displays members of a specified zoneset. Maximum length is 64 characters.
brief	Displays members in brief mode.
active	Displays only active zonesets.
vsan *vsan-id*	Displays zonesets belonging to the specified VSAN ID. The range is 1 to 4093.

Defaults

None.

Command Modes

EXEC mode.

Command History

This command was modified in Cisco MDS SAN-OS Release 1.2(2).

Usage Guidelines

None.

Examples

The following example displays configured zoneset information.

```
switch# show zoneset vsan 1
zoneset name ZoneSet2 vsan 1
  zone name Zone2 vsan 1
    fwwn 20:4e:00:05:30:00:2a:1e
    fwwn 20:4f:00:05:30:00:2a:1e
    fwwn 20:50:00:05:30:00:2a:1e
    fwwn 20:51:00:05:30:00:2a:1e
    fwwn 20:52:00:05:30:00:2a:1e
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
zoneset name ZoneSet1 vsan 1
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
```

The following example displays configured zone set information for a specific VSAN.

```
switch# show zoneset vsan 2-3
zoneset name ZoneSet2 vsan 1
  zone name Zone2 vsan 1
    fwwn 20:52:00:05:30:00:2a:1e
    fwwn 20:53:00:05:30:00:2a:1e
    fwwn 20:54:00:05:30:00:2a:1e
    fwwn 20:55:00:05:30:00:2a:1e
    fwwn 20:56:00:05:30:00:2a:1e
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
zoneset name ZoneSet1 vsan 1
  zone name Zone1 vsan 1
    pwwn 21:00:00:20:37:6f:db:dd
    pwwn 21:00:00:20:37:a6:be:2f
    pwwn 21:00:00:20:37:9c:48:e5
    fcalias Alias1
```